AMERICAN FARMER.

VOL. XIII. BALTIMORE, MARCH, 1858. No. 9.

ORK FOR THE MONTH.

MARCH.

ndulging in the hope that all of our friends who engaged in agriculture have by this time com-ted their arrangements, or at all events, have med the outlines of their intended operations the current year, we sincerely trust that their ns have been well considered and thoroughly ested, and that, in arriving at conclusions, they e fully considered and taken into account their *ual force of hands*, and supply of manures.

f such shall prove to have been the case, we ll cherish the hope, that a larger field of opera-ns has not been marked out, than each individu-has the ability to carry into profitable effect. is is the view of the case, it appears to our d, which a prudent consideration of human ions would induce us to adopt—this is the w, which all our sympathies, all our aspira-ns, would incline us to hope for. But unfortu-tely these natural conclusions are not justified by practice of many engaged in the pursuit of ag-ulture. The desire which animates many, of tching their culture over broad fields, without ability to manure the land liberally, or the nual force to cultivate it cleanly and well, is ong the besetting evils of our country. We ll it an evil, because the natural resulting con-quences are deterioration of land without cor-sponding profit, and disappointment as to pro-ction. And here we will select for remark a gle crop. The *corn crop*, for instance. A corn ower has a field of 100 acres. After summing all his manuring resources that he has for his rn crop, he finds that he has only enough ma-re to *fully* fertilize 25 acres, but owing to his bition to have a big field of corn he concludes spread it *sparsely* over his field of 100 acres. d let us see what will be the inevitable effect this determination. Why the corn plant being voracious feeder—a perfect gormandizer,—ding itself limited to only one-fourth the food ought to have, being generous, does its best to munerate for the favors bestowed, but its exer-ions are of but little avail. Its existence is a ickly one, and long before the period arrives hen its grain has to be formed, and formed too, the most part from the nutriments of the earth, finds itself without food, and as a natural re-ult, its ears are imperfectly filled with grain, at est, and some not filled at all; and why? simply, ecause the plant could not find the substances in the soil to form the grain out of. The atmosphere, to be sure, had been liberal in its contributions, but unaided but partially by the soil, its good intentions had been to a great degree defeated, and hence the smallness of the product. Now, had the owner of this 100 acres, who had manure only to fully fertilize 25 acres, applied it to the 25, instead of 100 acres, ploughed his ground deeply, and cultivated the crop well, the presumption is, the season being propitious, that he would have raised more bushels of corn on the small field thus treated, than he did over the larger one stinted of its proper quantity of food. Our policy, therefore, would be never to plant more corn than we could liberally manure the land for, thoroughly prepare the land for the reception of the corn, and give the latter the most careful and cleanly cultivation. By pursuing this latter course, we should hopefully look forward for a large and abundant crop of grain; at all events, in the belief that we had fully discharged our duty we should confidently repose our confidence upon Providence to reward our labors, while we should as confidently expect our land to be improving.

Feeling justified from experience in the justness of the remarks we have made, and the conclusions we have arrived at, we have thrown out these observations, in the hope that by calling the subject home to the bosoms and interests of planters, they may be induced to meet the questions, whether it is best to liberally manure, thoroughly prepare, and cleanly cultivate a small field of corn, or imperfectly manure, indifferently prepare and cultivate a large one. And having brought the subject prominently before our readers, we will turn our attention to other matters more immediately connected with the operations of the month.

Sowing Clover Seed.

If you have not sown clover seed upon your *wheat fields*, you may do so at any period during the current month. But if we had our choice as to the *precise time when* we would do so, we should wait until the frost was entirely out of the ground, and the soil become sufficiently firm not to be injured by the feet of the horses. We would then sow our clover seed, harrow the seed *lightly* in with a light harrow, and then roll the field with a heavy rolier. Especially would we subject the ground to these operations, if the wheat crop showed any evidences of having been upheaved by the contracting and expanding powers of frost and heat. We are aware that great hor-

ror is entertained of pulling the wheat plants out of the ground by the teeth of the harrow. In this horror however, we are free to confess that we do not indulge. The harrow we admit will pull up many wheat plants in the process of harrowing; but then most of these will be returned by the pressure of the roller. The roller will not only return the greatest portion of the roots to the earth that may be pulled up by the harrow, but will also *bury* many of the joints of the plants, the most of which will take root and grow into wheat bearing plants, and thus by encouraging tillering, will more than compensate for any plants killed by the operation of harrowing. We believe that, for every plant pulled up by the *harrow*, the *roller*, by the burying of the joints, will cause two other plants to tiller and grow. This is not all. The harrowing destroys grass and weeds, opens the soil to the genial influences of the atmosphere, acts as a cultivation to the wheat plants, and gives a fresh impulse to their growth. These are not ideal results—not mere theory—but are justified by actual experience and practice, the surest guides by which the agricultural mind can be enlightened.

Let us implore you, whether you harrow and roll your clover seed in, or not, do not omit to sow the seed on your land in wheat, as clover, in conjunction with lime, marl, or ashes, forms the only sure basis upon which the solid improvement of lands rest. Now, if you should be afraid to *harrow* and *roll* your clover seed on, do not on any account fail to roll it in.

In connection with the sowing of clover seed, we would remark, that the presence of calcareous matter in some form, in any soil in which clover may be grown, is absolutely necessary to its vigorous growth, and so also is plaster.

Quantity of seed per acre.—A bushel of clover seed should be sown over 5 acres of land, that is 12 lbs. to the acre.

OATS.

As our journal circulates over many thousands of miles in extent, embracing many degrees of latitude and longitude, and presenting various climates, it is time to saying something about getting in the oat crop. Now, oats is a most notable and necessary grain; but we fear it is too often put in under circumstances which forbid every hope of profit. Generally speaking it is sown upon some exhausted field whose fertility had been wasted many years before, in whose ungenial soil it finds neither bread nor meat, or if there be any they exist in such a minute, such infinite small proportions, as to be utterly insufficient for its support. Now, such practice should not be. The oat crop under favorable circumstances of soil and culture, may be made a highly lucrative one. Give the plants wherewith to feed upon, and it will return you its 30, 40, 50 and 60 bushels of grain to the acre. Instances of much larger yields than either of the figures named have been realized from an acre in oats; and, as what has been done, may be done again, provided similar means be used to produce the same favorable results. In our day we have seen 2400 bushels garnered from a 40 acre field.—This field had been manured, sown to wheat, upon which clover seed was sown, the clover seed took well but was over run with Carolina pink, the succeeding year the field was ploughed up deeply, harrowed into fine tilth and sowed to oats: the result we have before stated, which result proves, that oats only needs a fair chance to be highly remunerative.

However much we may appreciate the oat crop; and we do appreciate it very highly—we would advise not to sow oats at all, unless the soil in which you place the seed is such as to justify the hope of a remunerating return; for it is futile for a farmer to toil without the prospect of reward.

Protesting, as we do, against cultivating oats on lands where there is nothing to feed the plants, it may become us to prescribe some *formula*, not costly but of easy procurement, by which remunerating crops may be secured, and this we here attempt, premising that the quantities named of each number, is for an acre of land.

No. 1. Ten loads of stable or barn yard manure, 1 bushel of plaister, and 2 bushels of salt. The manure to be ploughed in, the plaster and salt to be sown broadcast and harrowed in.

No. 2. Ten loads of mud from river, creek, or marsh, mixed with 20 bushels of ashes and ploughed in.

No. 3. Two hundred pounds of Peruvian guano and 1 bushel of plaster, to be mixed together and ploughed in.

No. 4. Ten loads of woods mould and leaves, 2 bushels of salt, 2 bushels of bone dust, 10 bushels of ashes and 1 bushel of plaster, to be mixed together and ploughed in.

Either of the above receipts will bring a good crop of oats. By doubling the quantities you may secure a large one.

Preparation of the ground.—Plough deep, say from 6 to 8 inches, harrow and roll and bring the soil into fine tilth.

Seeding.—Harrow the seed after being sown well in, and finish by rolling.

Quantity of seed per acre.—Two bushels of seed per acre is enough in ordinary soils: though 3 and even 4 bushels per acre may be sown on good lands. The latter quantities have been more generally sown on fields where very large crops have been raised.

DRAINING.

Thorough draining of wet lands add greatly to their value.

PERMANENT PASTURES.

Every farm of a few hundred acres should have a permanent pasture of a size commensurate with the wants of the owner's stock.

EARLY POTATOES.

The earlier a farmer gets his potatoes into the market, the better will they pay, therefore, so soon as the frost is completely out of the ground, and the earth in a good condition for being worked and put in fine order, get it in ready and plant early potatoes.

Soils, &c.—Grass-swards, clover-leys, and new ground are said to be the soils and places best adapted to the growth of potatoes. *Light sandy, loamy soils* well filled with vegetable matter certainly grow the mildest, most mealy and best flavored roots—though for *quantity*, judging from our own experience, clayey loam well manured, and well cultivated will contend with the best of them.

If you desire to grow a large quantity per acre there is no crop requiring more ample supplies of food than does the potato. It is a greedy, coarse, gormandizer, and can digest large quantities of manure. Its manure must be ample in quantity, rich in quality and calculated from its nature, to carry

on, from beginning to end, a continuous supply of pabulum. There must be no balk in the gratification of the appetite of the potato—whenever its hunger and thirst may be whetted into keenness, there must be no lacking in the means of indulgence—feasting during one part of its growth, and starving at another, does not accord with the habitudes and propensities of this most excellent root; privations suit not its taste or its nature—every check upon its indulgence, paralyzes its energies, and despoils it of its fair proportions.

Manure for an acre of land.—1. Twenty two-horse cart loads of barn yard or stable manure, 10 bushels of ashes and 1 bushel of plaster well mixed together, and applied in the drill. 2. The same number of two-horse cart loads of barn yard manure and marsh mud—salt marsh the best, 10 bushels of ashes and 1 bushel of plaster to be well mixed together, and applied in the drill. 3. Ten two-horse cart loads of marsh or river mud, 10 bushels of bone earth dissolved in sulphuric acid, the latter mixed with 10 bushels of ashes and the whole mixed together, and applied in the drill. 4 Ten two-horse cart-loads of wood's mould, mixed with 10 bushels of ashes and 100 lbs. of Peruvian Guano. 5. Ten two-horse loads of marsh-mud, 20 two-horse loads of sea-weed and 1 bushel of plaster, mixed together and laid in the drill.

Either of the above recipes will make a good dressing for an acre in potatoes.

Preparation of the ground.—We contend that much depends upon the manner in which the ground may be prepared. Deep ploughing and perfect pulverization we hold to be essential to success, so much so, that we would invariably use the subsoil plough as an adjunct to the other plough, in order that the bed of the potato should not only be deep and well pulverized, but dry, in order that the roots may not be acted upon unfriendly by an excess of moisture. If the ground selected be a grass-sward, or clover-ley, the roller should precede the harrow to compress the furrow slices, which should be turned flat, and to avoid the disturbance of the sods; the harrow should be run lengthwise of the furrows, to be followed by the roller.

Laying off the rows.—Lay off the rows 3 feet apart. This distance gives ample room to work the potatoes, and for the circulation of light and air, considerations of importance to the successful growth of this plant.

Depth of the furrow.—The furrows should be 6 inches deep, to allow ample space for depositing the manure, inserting the setts, and covering.

Manuring and planting.—Strew the manure 2 or 3 inches in depth, in the bottom of the rows, place the setts 10 inches apart upon the top of the manure, eyes uppermost, and cover with the plough or hoe, as may be most convenient.

Preparation of the setts.—We have always been in the habit of selecting the best potatoes we could find, large in size, and changing our seed every two years. And to so cut the setts, as to have at least two eyes to each sett. As we cut the setts we rubbed the cut part in plaster or ashes, so as to dry the wound. After preparing the setts thus, we laid them out on some dry airy place to dry, where we permitted them to remain a week before planting them. When thus dried, they are not so apt to rot in the ground, and come up more regularly

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After Culture.—As soon as the potatoes begin to come up, run a harrow through them over the rows. This process destroys grass and weeds, ensures a general stand and serves as a cultivation of the potato. When the potatoes are up 3 or 4 inches, throw a furrow from them, and return it at the same time, so as to leave a *slight flat* hill, and strew 4 bushels of ashes over the vines. In two weeks plough again, increasing the size of the hill somewhat, preserving its flatness. The weeds and grass on the rows must be relieved by hoe and hand. At this working strew over the vines on each acre a mixture comprised of 5 bushels of ashes, 2 bushels of salt, and 1 bushel of plaster.—In two weeks after this give a third and last working, increasing the size of the hill a little, preserving its flatness, and by repeating the top-dressing before advised.

Quantity of seed per acre.—It requires from 12 to 15 bushels of potatoes cut into setts to plant an acre.

Artichokes.

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Root Culture.

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It is too soon to plant these roots now, but not to get the manure in place.

Fences.

Examine all your fences and have them thoroughly repaired.

Gates and Bars.

Have all the bars on your place substituted by good light gates.

Fence Sides and Corners.

Have every bush, shrub, bramble and briar eradicated from the entire lines of your fences.

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Barley.

This grain should be sown as soon as the frost is out of the ground and the land can be ploughed and got in first rate order. Barley delights in a good rich loam. Land that would bring 20 bushels of wheat, under the same treatment would

bring from 30 to 40 bushels of Barley. It would be useless to attempt to grow it on poor land and let it depend upon the air for its food. We are a *rational* believer in aerial food, but we never have, and never can be made believe, that a crop grown on poor, unmatured land, that has to depend upon the air for its organic food, will ever turn out a good one.

Two bushels per acre is the general quantity of barley sown, though 3 and even 4 bushels are sometimes seeded on an acre of very rich loamy land.

Milch Cows.—These should be well fed, slopt and well cared for this month, as it is a trying one upon them. See to it that they are watered thrice a day, and salted twice a week.

In-Calf-Cows and Heifers.—These should be well cared for during this month, though not slopt until they bring forth. Have them watered thrice a day, and salted twice a week.

YOUNG STOCK GENERALLY.

Your young stock should receive full allowances of good hay or fodder twice a day, say morning and noon, and at night receive a feed of cut straw, and say ½ gallon of chopt grain, to be well mixed together.

WORKING HORSES AND OTHER STOCK.

Let these receive generous treatment—plenty of food, regularly given them; have them curried and brushed or rubbed with a whisp of straw, night and morning; see to it that they have good clean beds of straw of a night, water thrice a day, and 2 ounces of salt, or the same quantity of a mixture of mild lime, ashes, and salt, thrice a week.

SHEEP AND IN-LAMB EWES.

These must be carefully attended to throughout this month. Besides their usual allowances of hay and straw, they should receive roots or meal daily, and have salt always accessible to them in a trough under cover, and pine boughs to browse upon, supplied them twice a week.

BREEDING SOWS.

See that these are regularly fed thrice a day, and watered as often. Charcoal, rotten wood, and ashes, should always be accessible to them; and they should have good warm bedding at night.

STORE HOGS.

Feed these so as to keep them always growing; water them regularly thrice a day, keep before them a constant supply of charcoal, rotten wood, salt and ashes, and give them a warm clean well littered bed to sleep on.

POULTRY.

Have their houses cleaned out, whitewash them inside and out, not forgetting their nests. Let them have plenty of food, and alternate it if convenient; have them well supplied with fresh water, not forgetting *mild* lime, sand, ashes and gravel.

OUT-HOUSES.

If these have not been recently attended to, have them cleaned and white-washed.

SHADE TREES AND SHRUBBERY.

If your house is not already adorned with shade trees and flowering shrubbery, plant both kinds this spring early. A country mansion, without such sources of comfort and embellishment, presents a most gloomy spectacle. But besides appearance, which always should be looked to, such adornments contribute to comfort, health and mental enjoyment, and makes one fond of his home.

TOBACCO BEDS.

Let planters see to these.

MEADOWS.

If your meadows are turf-bound, harrow them as soon as the frost is out of the ground; then sow on each acre, a mixture comprised of 2 bushels of bone-dust, 5 bushels of ashes and 1 of salt, and roll.

POULTRY-DUNG.

Save this in barrels kept in a dry place, every two pounds is intrinsically, if properly preserved, worth as much as one pound of guano.

URINE, SOAP-SUDS, DISH-WATER.

Have 50 loads of marsh mud, woods-mould, or other earth formed into a heap in your barn-yard, and make it the duty of some one of your house servants to pour the urine, soap-suds, pot-liquor and other refuse matters made about your house upon that heap, and at the end of the year every pound of it will be good manure. Every few days let plaster be sprinkled over the heap.

WORK IN THE GARDEN.

MARCH.

As this month is to the judicious gardener one of action, we will endeavor to point out how he may improve his time and forward his operations in the garden.

Sowing Cabbage Seeds.—About the 20th of this month cabbage seeds of various sorts may be sowed in a warmly situated border facing the south, unless the season should be backward. Sow both early and late kinds, in order that you may have a regular succession of cabbages. Prepare the ground by manuring, spading it deeply and thoroughly pulverizing it with the rake. The ground being raked well and made perfectly fine, then mark off the border into as many compartments as you may have different kinds of cabbage seed to sow. The division of the border into compartments may be done with the spade or by pressing a board down so as make a dividing line. Mark each division so that you may be able to distinguish each variety of the plants when they grow. Mix each kind of seed with ashes, so as to enable you to sow them thinly. The seed being sown sow ashes over them, rake the seed in and compress the earth around them by placing a board on the border and treading on it, or by patting the ground with the back of a spade or shovel. In from 6 to 8 weeks these plants will be fit for transplantation in the beds, in the open ground, for heading, should the season prove favorable.

Planting Peas.—As early in this month as the ground from the absence of frost, can be prepared in good condition, plant peas. And to ensure a continuous supply, plant more every two weeks, during this month and the next. It will not be advisable to plant while the ground is tough and wet. When the peas are about 6 inches high stick them.

Beans.—As soon in this month as the ground is in a condition for being well worked and put in good condition, prepare a bed and plant beans for an early crop, and to ensure a continuous supply put in others at intervals of two weeks during this and the next month.

Sowing and Setting out Lettuce.—As soon as the

weather is mild and tolerably warm this month you may sow lettuce seed, and repeat the sowing every two weeks during this and the succeeding month. If you have lettuce plants ready for setting out, you may transplant them in a warmly exposed border as soon as the ground is in a condition to be well prepared for their reception.

Sowing Radish Seed.—As soon as the ground is in a condition to admit of being well prepared, sow Radish seed, and repeat the sowings every two weeks thereafter during this and next month.

Sowing Spinach Seed.—Prepare a bed and sow spinach seed as soon this month as the ground can be well prepared.

Carrots and Parsnips—Any time after the middle of this month drill in carrot and parsnip seed for early use.

Small sallading.—Prepare a warm border and sow small sallading of sorts.

Celery.—About the 15th of this month sow celery seed on a warmly exposed border of rich mellow earth.

Cauliflower and Broccoli—Prepare a bed on a warmly exposed southern border and sow cauliflower and broccoli seed, as soon as the ground can be well worked.

Borecole.—Towards the last of the month, if the weather be mild prepare a bed on a warm, southern exposed border and sow Borecole seed.

Dressing Asparagus Beds.—As soon as the frost is out of the ground, fork in some well rotted horse dung, this done smooth the bed with a rake and dust it over with salt. In forking in the dung be careful not to go deep enough to injure the crowns of the roots.

Planting Asparagus.—New plantations of asparagus may be made as early this month as the ground is in a condition to be worked well.

Sowing Asparagus Seed.—About the latter end of the month, sow asparagus seed on a bed prepared on a border.

Sowing Beet Seed.—As soon as the ground is in a condition to be well worked drill in a few rows of beet seed. The red or blood beet is the best for garden or table use.

Sowing Onion Seed.—In order to have good well sized onions from the seed this season, you should drill in the seed as early this month, as the earth is in a condition to be well worked.

Sowing Leek Seed.—As early this month as possible, sow leek seed.

Planting Onion Sets.—Get your onion sets in as early this month as the ground can be got in good condition.

Planting Garlick, Rocambole and Shallots.—As soon as the ground can be well worked, prepare some beds 4 feet wide, and plant out the above.

Planting out Chives.—As early this month, as the ground is in a condition, plant out chives; they make a good edging for the borders of beds.

Early Turnips.—As soon as you can prepare the ground, sow a bed of Early Turnips; the best kind is the Early Dutch.

Salsafy.—Towards the latter part of this month, prepare a bed, and drill in Salsafy seed.

Sowing Parsley Seed.—As soon as the ground is in a condition to be worked, make drills around your beds and borders, and sow Parsley seed.

Pot and Medicinal Herbs.—The latter end of this month, you may set out the slips of hyssop, thyme, winter savory, rue, rosemary, lavendar, sage and other herbs, or sow the seed of either.

Red Peppers, Tomatoes, Egg Plants.—Sow the seeds of these in pots and forward them in your hot beds early this month. If you are not provided wih hot-beds, set the pots in the windows of a warm room facing the south.

Horse Radish.—Choose an open situation, a light, rich, moist soil, manure it liberally, trench in the manure two spades deep, and dibble in a bed of horse radish slips.

Rhubarb or Pie plant.—Early this month is the time for setting out rhubarb plants, and for sowing the seed.

Garden Fruit Trees.—These should early this month have all the necessary pruning done, and have some rotten manure forked in carefully so as not to injure the roots, and then receive a top-dressing of ashes.

Gooseberries and Currants.—These should be pruned early this month and have a dressing of well rotted manure. New plantations should be made early.

Raspberries.—Prune and tie up your raspberry bushes early this month.

Strawberries.—If your strawberry beds have not been cleaned off and dressed, without delay clean them off and give them a dressing of well rotted manure, dig it in between the rows carefully, and then spread straw or tan thereon, and spread ashes over the bed.

[For the American Farmer.]

CHINESE SUGAR CANE EXPERIMENTS.

WESTON, WESTMORELAND CO., VA.
Nomony Grove Post Office.

MESSRS. EDITORS:—Supposing there are many whose curiosity would be gratified by a statement of the result of the experiment which I tried last season, in the culture of the Chinese Sugar Cane, I will now proceed to give as accurate an account as my memory will serve me. The first seed I planted the last of March; they were nearly one month in getting up; I only planted a small quantity at that time—on the 7th and 8th days of May I planted about four acres in cane, in rows four feet one way, and the hills about eighteen inches the other; when the plants got some four or five inches high, it was thinned out to three stalks to the hill, then cultivated exactly as Indian corn; its average height was about twelve feet; it commenced ripening early in August, or the seed commenced turning black. The cost of seed, fertilizers and cultivation cost me $51. I kept an accurate account of all the time and labor employed during the time up to the maturity of the cane. I was so situated when grinding and boiling the syrup, I could not keep an accurate account of expenses on account of the loss of time occasioned by not having a suitable mill, or one which was not liable to break every day. I was under the necessity to plan my own mill and have it built; the first one was made for the cylinders to revolve horizontally, by attaching it to an eight horse power, which I found would not answer; I then tore it apart and constructed one to work with vertical cylinders with a sweep at top for levers—with this mill I could express about sixty gallons of juice per hour; it was the latter part of September before I started this mill; there was some part of it either wearing out or giving away nearly every day for nearly two weeks; I however succeeded in getting the defective parts made strong, and then I had but little trouble, except for want of hands to strip

the fodder, cut the seed and get the cane to the mill; as I had to be seeding my wheat at the same time, I had to rely principally on hired hands.

I found that the riper the cane the richer the juice was in saccharine matter; the first syrup early in the season required about seven gallons of juice to make one gallon of syrup—about the time we had a severe killing frost and freeze, the latter part of October, five gallons of juice made one of syrup; I found the same cane contained fully one pint of juice per stalk, taking the stalks just as they came. I am satisfied there can be from two to three hundred gallons of good syrup raised per acre, with a good mill that will extract the juice well. I do not think I saved more than one half as much as could have been made if I had have been properly fixed in time. I however made five hundred gallons of syrup; there was a considerable quantity wasted which I let the stock feed on, which I found they were remarkably fond of, horses, mules, hogs and cattle; and as a fattening food I do not think the cane has its equal; I believe one acre planted in Chinese Sugar cane for feeding purposes, for stock of all kinds, except sheep, (I know not whether they will eat it or not,) is worth fully four times as much as any thing else, which can be raised on the same land. One of my neighbors, who raised a lot of it this past year thinks it far more valuable for feeding purposes than I have stated above—he thinks the product of one acre worth about as much as twenty in corn, as the stock consumes every particle, including the stalk, which in Indian corn is of no value whatever, while the stalk of the cane is more nutritious, if possible, than corn itself. From an estimate I made, I think I made about sixty bushels of seed per acre,—this is only supposition, as I have not yet stripped the seed from the heads, and shall not be able to state how many I did make, as a considerable quantity was consumed by the work oxen and horses engaged about the lot; every chance they could get they would find their way to the scaffolds where the seed were placed to dry, and would eat as long as they could, and I never saw stock fatten faster than they did.

In the making of the syrup I used lime water for clarifying the juice, first straining it to get rid of all sediments; at first boiled it very slow, until all of the green scum ceased rising, and gradually increased the boiling process until the syrup would hang from the edge of a skimmer made of sheet iron in a sheet at least one inch below. There is no danger of burning if the kettles are kept full. I found the broader the kettles the better they were for the purpose. I had six kettles put up in two arches in rows, three in each; as the juice would boil away I would fill the kettle nearest the chimney out of the next one to it, and transfer from the other kettle the contents of the next, and the empty one fill again with fresh juice; thus keeping filled up until the syrup was finished.

I think with ten hands I can take the cane from the field, strip it of fodder and seed, grind and boil one hundred gallons of good syrup per day; it will require a pair of horses or mules for the mill and a yoke of oxen to haul the cane. The last barrel of syrup I made I did not strip the fodder, but run it through the mill as it was only cutting off the seed. That syrup was darker than the other, though I believe that was caused by the canes being frosted, as we had a freeze about two weeks previous to its grinding. I made a small quantity in a bell metal kettle; the syrup made in it was about the color of honey, that made in iron the color of Orleans molasses. I found my pen hogs improved much faster after I commenced giving them the cane, after I had passed it through the mill, than they had any time previous.

I used eighteen dollars and forty cents worth of guano, De Burg's and Reese's Manipulated Guano, on the lot—the fertilizers costing four dollars and sixty cents per acre, the cultivation four dollars and seventy-one cents per acre, and the seed which it took to plant the lot three dollars and forty-four cts. per acre. I could discover but little difference between the different kinds of fertilizers used—I think there was rather the largest growth from the guano.

I have no doubt the lot would have raised one or two more stalks to the hill, as I saw no difference in the size of stalks where there was but one and those where there was three.

It is my intention to have some of the seed ground and try what kind of bread they will make. If the flour or meal should be as good for the purposes of bread it will be a much safer crop to rely on than Indian corn, as neither of the extremes of excessive wet, or dry, affects it like corn.

I will now in the last, and least important quality which it possesses, inform you of an experiment made with the juice, by having some of it distilled. I found it took about twelve gallons of the juice to make one gallon of——I suppose I must call it Brandy, as it resembles Peach Brandy more than any other spirits I have ever seen—though it has its peculiar flavor. It is the strongest spirit I ever saw.

Owing to my unprepared condition for the manufacturing of the syrup, I could form no accurate account of expenses per gallon as previously alluded to, but think ten cents per gallon will cover expenses of saving, grinding, boiling, fuel, &c. I did not attempt to make sugar, my principal object was to test its value for syrup. There are different opinions in regard to it; many prefer it to New Orleans molasses, while there are others who prefer the Orleans; but there is no doubt it is a good article, and after more experience has been gained there will be but little molasses brought to the country. There was sugar made in this county from the cane last Fall, by Mr. B. Walker, of an excellent quality; also some by Dr. B. F. Brown, so there is no doubt about its crystalizing, but to what extent none of us yet know. I examined last night a small quantity of the juice which I put away for the purpose of seeing if it would turn to vinegar; it appears as if it will be as good vinegar as any made from cider, though I cannot speak positively about it, as the barrel has been stopped tight. The syrup possesses one quality which no other molasses possesses. It has a tendency to constipate the bowels, rather than otherwise.

There were several colored children of my family who had suffered severely with summer disease, and nothing would make a permanent cure until they got as much of the syrup as they were disposed to eat; after that I heard nothing more about the disease.

Yours truly,

W. W. BROWN.

☞ A communication on Corn Cultnre, from H. H. Hite, Louisa Co., Va., was received too late for this number. It will appear in our next. One from G. H. Russell, on the Apple Tree, is also received.

SURFACE MANURING.

OXFORD, PA., JAN. 19th, 1858.

To the Editors of the American Farmer:

GENTLEMEN:—In looking over the American Farmer for December I find an article by the Senior Editor, on the best mode of applying manure, in which he gives a quotation from Morton's Cyclopedia, of Agriculture, and endorses the opinion therein contained; that quotation advises the plowing in of all manures, under all circumstances, to as great a depth as possible, and denounces all who act differently as perpetrators of enormities, violating all chemical laws. I have been a reader of the American Farmer for years, and I trust with profit, and have looked upon the editorials of the Senior Editor as mostly containing sound doctrines, but in this instance I must differ with him, and look upon him as the perpetrator of the enormity. There is an old adage, "Experience teaches wisdom," and experience shows that surface manuring will produce the greatest results.

As all Agricultural success depends on the non-violation of chemical laws, hence the query, is surface manuring a violation of such laws? It cannot be, or the results would be different. I will give but one of many examples, which have come beneath my observation, showing the advantage of allowing manure to lay spread on the surface for a length of time before it is turned under. A neighbor of my own, who was a strong advocate of the burying system, had spread his manure on a clover sod, intending to plow it under for wheat, and although the ground was very dry, proceeded to turn it under with a double team; after he had about half the field plowed he was advised to stop until it rained; his answer was, my manure will all be lost, being exposed to the hot sun, it will all dry up. The offer was made, if he would leave it for the sake of the experiment, any loss which might result from its not being as good as the other part of the field, would be made up to him; he left it, and as the weather continued dry, it was about five weeks before he got it turned under, he growling all the time that he would lose his crop, but consoling himself that he would make the fool who gave bad advice pay for his folly. The result at the next harvest was, where the manure which lay exposed to the sun for five weeks, produced almost twice as good wheat as where it was plowed under as soon as spread. This result could not have happened had any chemical law been violated. I admit that ammonia is a powerful fertilizer, and also that it is a volatile substance, and will pass off into the atmosphere when exposed, which fact is the only hook the advocates of the burying system have to hang their theory upon; but the amount of free ammonia in stable manure is so small, and in barn yard still less, that the loss of the whole of it would be an exceeding small matter. The quantity of ammonia must not be reckoned by the smell it makes, it is like shearing the pig, "more squeal than wool." The elements which unite under the fermentation process to form ammonia are as valuable as fertilizers, before they unite to form that compound, as they are after, and as readily appropriated by the roots of plants, and indeed more so, as they must be separated before the plants can take them up; chemical analyses does not find ammonia in any living plant or seed, but hydrogen and nitrogen are found in abundance. As soon as manure is spread the fermentative process ceases, it cannot go on except under favorable circumstances, and these circumstances are not present where the manure is spread over the ground, hence there is no further formation of ammonia, and as there is no other constituent of the manure volatile, there can be no further loss; the water of the manure will evaporate, but it carries nothing along with it. The first rain will leach it and carry all the soluble parts into the soil in solution, the insoluble particles pass down to the roots of the plants through the porous earth. All soils which are worth manuring have an open strata of dark earth, which contains decomposing vegetable matter and a substance known to chemists as humus—this compound or mixture has the property of seizing all substances held in solution by water, provided they are not in too great a quantity, beyond its capacity, and holding them, allowing the water to pass through pure, hence the fertilizing properties of the manure are detained by the humus and held ready for the nourishment of any plants which may lend their roots to take them up. The subsoil does not possess the property of separating impurities from water to any thing like so great an extent, hence when manure is thrown to the bottom of the furrow, the water which after every rain filters through the soil, takes with it, to an unknown depth, a great portion of all soluble substances which it meets with, and deposits them so far down that the roots of the plants never reach them, and they are lost. There is much more lost by this filtering process, by plowing down manure, than by evaporation in top-dressing.

Another strong argument in favour of surface manuring, is the immediate stimulus which it gives to vegetation. It is an admitted fact, I believe, that plants derive a large portion of their nourishment from the atmosphere, the more luxuriant a plant, the more it is able to appropriate, hence more carbon and nitrogen is fixed in the soil in the form of roots, and all farmers know the advantage of plowing down a good stiff sod over a thin and loose one.

Agriculture is a science, as much so as medicine. The Physician who would attempt the practice of medicine, without understanding the chemical combinations of his drugs, or their effects on the system of his patients, would be considered as deserving of indictment. Our farmers are every day, by not understanding the science which they practice, turning off a stream of wealth from their pockets, which would astonish them if their eyes were opened; I trust the day is not far distant when their eyes will be opened. The Agricultural College which you are giving your energies to establish in Maryland, together with the Farmers' High School to which Pennsylvania has so generously extended a fostering hand, to the extent of an appropriation of $50,000, will be strong aids in bringing about that good result.

A CHESTER COUNTY FARMER.

[Our respected correspondent, who is a highly respected physician of Chester county, Pa., has given a strong case in favor of the view of the subject he espouses, about the best we have seen, as it was a fair comparative experiment; and had he given his name to the public, it would have added still greater weight to his report; but as an offset to it, we annex the following experiment

made by Lord Kinnaird, which appears to have been very accurately made—and also refer to the mode of culture of an acre of corn, by Dr. Parker, on which he raised more than 200 bushels—given on another page—these are facts well attested.

We will here add, that after preparing a reply to Mr. *Calvert* and others upon this mooted question, which, from various causes, was not completed as early as was intended, and will occupy more space than was at first contemplated, we find that our pages are already occupied to overflowing for the present month. It will certainly, appear in our next.—ED.]

COVERED AND UNCOVERED MANURE.

EXPERIMENTS BY LORD KINNAIRD, ENGLAND, WITH COVERED AND UNCOVERED MANURE:

With uncovered Manure.

	tons.	cwt.	lbs.	
1st measurement—1 acre produced	7	6	8	of potatoes
2d do 1 do. do.	7	18	99	do.

With covered Manure.

	tons.	cwt.	lbs.	
1st measurement—1 acre produced	11	17	26	of potatoes
2d do 1 do do	11	12	26	do.

As soon as possible after the potatoes were harvested, the field was cleaned, plowed and wheat drilled in, at the rate of three bushels per acre.—As soon as the weather was suitable in the spring, the whole field got a dressing of 3 cwt. of Peruvian guano per acre. During the winter very little difference was apparent; but shortly after the application of the guano, the wheat on that portion manured by the covered dung took a decided lead, which it retained all summer. The whole field was cut on the 26th of August, 1852: the portion manured by the uncovered dung being at least four days earlier than the other. As before, the two separate portions in each half of the field were measured, cut and stooked separately. On the 4th Sept., each portion was threshed, the grain carefully measured, and the straw weighed. On account of a wet season the grain was of lighter weight than usual, in Great Britain, per bushel. The result of the experiment was as follows:

With uncovered Manure.

	Produce in grain.		Wt. per bush.	Produce in straw.	
	acre. bush.	lbs.	lbs.	stones.	lbs.
1st	41	19	61½	152	of 22
2d	42	38	do.	160	do

With covered Manure.

1st	55	5	61	220	of 22
2d	53	47	61	210	do

These and similar experiments have satisfied Lord Kinnaird of the advantages to be derived from having farm-yard manures put under cover. They seem so conclusive and instructive on this point as to deserve to be brought before the farming classes of this country.

Another Pennsylvanian, who signs himself "A Practical Farmer," in a paper under the title of "An Old Farmer's Experience," giving instructions in regard to the cultivation of Corn, and published in the Germantown Telegraph, of the 16th ult., says:—

"If manured with ashes, drop half a gill with the corn and cover both together; ashes do the best on a heavy soil, being of little use in sandy land. If compost is used, put a shovel full on a hill; but in whatever way the corn may be covered, be sure to tread on every hill, to pack the earth about the seed; it will cause it to germinate, and come up better, than if it is not done. After the corn has come up, put a small handful of plaster on each hill; keep the ground loose and mellow and destroy all grass and weeds. The more the ground is stirred while the corn is young, the better it will grow.

"As to applying manure, my experience has taught me, that in whatever state the manure is when hauled out, it should (except top-dressing on grass land,) *be plowed under immediately, while in a moist condition, as much of its fertilizing qualities are lost, by its becoming dry before it is covered.*"

For the American Farmer.

CULTIVATION OF TOBACCO.

By JOHN D. THOM, ESQ., of Brinkleyville, N. C.

1st—*Seed.*—Select the largest and finest looking plants for seed. Most of the leaves should be taken off, so that the seed may ripen and mature more perfectly. Be sure to turn out more plants for seed than you think necessary, as you often have to sow over twice on account of severe freezes. When the seed, or pods rather, containing the seed, begin to turn brown, cut off the stalks about a foot below the pods, and hang them up in a cool, dry place. Allow the seed to remain in the pods until you get ready for sowing them; they keep much better than if rubbed out and put in other vessels. When wanted rub out and run through a fine sieve.

Beds for Raising Plants.—A rich loam in which there should be very little or no sand, (plants do not thrive where there is sand) on a southern exposure, where the sun the whole day can have full power upon the beds, protected on the north side by a hill and shrubbery, is the best soil and place for a plant bed.

Preparation of the Beds.—Clean off the ground nicely on top, not leaving any weeds or grass; then place small poles of wood about four feet apart, 10 feet long, on the ground, cover these crossways with a layer of dry wood, then pile on dry brush, and alternately dry wood and brush, until you get it covered about three feet deep; then pile on two feet more of green wood, the dry wood and brush will burn it better than if the wood is all green. I will here remark, there is no danger of burning too hard, for plant land is almost always very damp land, and it takes a great deal of heat to burn it as it should be; some say, don't burn too hard, for you will destroy the vitality of the land—but I have burned with heavy wood 4 or 5 feet deep, and then had plenty of grass to pick out at that. Grass seed are hard to destroy, so I would advise all to burn well. Be certain not to put large pieces of wood next to the ground, for you will thereby shade the ground and lose the effect of the heat. After the wood is all properly arranged, place the hands all around the bed and fire on every side at once; this will have the tendency to draw the heat inwardly, instead of blowing off. Early in the morning is the best time to fire, as the hands continuing to work during the day are not so liable to take cold—most persons fire late of evenings, which is wrong, for the

hands taking the cool night air and stop exercising their bodies, after coming from a hot fire, are apt to take violent cold by sudden check of perspiration. After the wood is burned, allow the bed to cool off, then hoe up, being careful not to turn up any of the subsoil; take out all the roots, the stumps being allowed to remain, as you cannot take them up without disturbing the subsoil; the ground should be hoed with a narrow hilling hoe, about 5 or 6 inch deep, then raked and cross raked, until you obtain a fine tilth, after which lay off and sow your seed. Previously however, Guano (Peruvian) at the rate of 800 lbs. per acre, should be sown and well incorporated with the soil. Very dry and fine stable manure, I would prefer even to the guano, if you could get it free from grass seed, which is not possible, unless you pen your stock under shelter and feed on certain food. Mix a gallon of dry sifted ashes to every half pint of seed, one gill of seed to be sown in every eight yards square. Tramp with the feet or roll with a hand roller, then cover pretty thick with green brush on which there should be no leaves or berries; let the large end of each brush lop on the small ends of the others, so the seed will have a fair chance to come up. It is best to sow Tobacco seed thick, as a great many will not germinate, and possibly a great many may be killed by freezes; after they get the size of a quarter of a dollar they can be easily thinned out with a small iron tooth rake if too thick. After the seed come up, every ten days they should have a light dressing of Peruvian Guano or stable manure, a little plaster, ashes, finely powdered charcoal, &c. In dry weather, water the beds every morning and keep all the grass cleanly picked out, but be careful not to bruise the young plants.

Prevention vs. the Fly.—In cool weather in the spring, look out for the greatest pest, the fly, which come in large numbers, and will soon destroy your whole bed. They are a very small black, or brown coloured fly, which eat small holes through the plants about as large as a knitting needle would make, until they entirely destroy them; after the plants get larger they will not eat them. Different methods are adopted by different farmers to destroy and keep off these destructive flies, but as yet, as far as my experience or knowledge goes, nothing has proved an effectual remedy. I will enumerate some of the different plans, which sometimes will and sometimes will not have the desired effect. Train oil put or sprinkled in small quantities, is used by some; a strong solution of guano and water by others, also meal bran sowed broadcast over the beds after taking off the brush, which 'tis said attracts young birds who in turn destroy the flies; but the best plan according to my limited experience, is to sow very fine stable manure over the beds, which not only partially protects the plants from the ravages of the fly, by being a sort of covering, but also stimulates the plants and pushing them forward in growth out of reach of the fly and freezes, and will make them large enough for very early planting. As soon as the danger of being killed by cold is over, remove your brush by setting out. The first good season in May draw all your largest plants, being careful again not to bruise any by stepping on the beds, and if the ground is most too hard, and the plants break off in drawing, water the beds freely, and they will come up more easily.

Preparation of Land.—The land which you intend for tobacco, should be broken deep in the fall and in the spring again broken up and sub-soiled, harrowed and rolled, after sowing upon it 300 lbs. guano per acre, and 3 bushels plaster paris. Or drill in 300 bushels compost per acre, made of woods-mould, ashes and stable manure. (The latter plan I shall adopt this spring.) About the middle or last of April make up your hills after checking your land off 3 feet each way, some plant 3½, but I find if you plant nearer, the ground will be better shaded, thereby keeping the ground more moist, and making the tobacco a better colour; nearer than 3 feet will not do so well, as it will be broken by the horses or mules, and singletree of the plow. Your land being laid off each way, make your hills 10 to 12 inches high, conical or sugar-loaf shape, so they will be ready for the first season to set out, when part of the hands go along with their hoes ahead of the planters and cut the hills off to about 4 or 5 inches high; the advantage of having the hills made as above directed, consists in the moisture, which will be found in the hill after cutting off, thereby insuring a more perfect stand of the plants.

If you wait for a season to come, it will be too late to make hills then, for by the time your hills are made, the ground will be too dry, and if they are not made high, so as to be cut off, the ground will get too dry on top of the hills to get a good stand. I don't approve of the hills being high, when the plants are set out, however, for flat hills are the best, being nearer the ground, and consequently more moist.

The plants should be placed in small baskets, or if in a cart, not too many together, as they will bruise, and if the beds are some distance from the land to be planted, cover over the plants with wet brushes to protect them from the rays of the sun. Let the old hands and boys drop the plants one at a time, on each hill, each one carrying two rows at the same time, the most active hands following, taking the plants in the left hand and straitening the roots with the right, and planting about 4 inches deep with a stick made for the purpose, 1 inch in diameter; the holes should not be too deep for the ends of the roots to touch, so as to take hold and to live; squeeze the dirt tightly around the plant, so that they will not come up by taking them by the tip end of the leaf and giving a gentle pull.

If you cannot get good seasons in time to set out, and your plants are growing too large, you can water the hills late in the evening and set out, but this is a very tedious and slow process In about ten days after the plants are set out, the hoe hands must go over and gently break the crust from around the hills, and give them a light weeding. The thin crust on top being broken, the plants will take a start to grow as the air will be permitted to circulate freely to the roots; following the hoe hands, run what I call a Tobacco plow, which is made in the shape of an old fashioned (and now much used,) Dagon or Clark hoe, the wing being cut off so as to be 2 inches wide at the top, and 6 or 7 inches at the bottom, run the bar-side close to the plant as you can without injuring it, then turn the dirt back in the same furrow with the wing. A light cultivator being used will facilitate the work of the hoe hands, and the best I have seen are made by those obliging and accommodating gentlemen of your city, Messrs. R. Sinclair & Co. If the land be dry or least inclined to break up in clods or pieces in plowing, it must be dispensed with for the time being, and have recourse to the weeding hoe only,

for thus plowing it will jar the plants and cause them to be exposed to the sun. Continue the use of the plow and cultivator above described until laid by.

In the second plowing a little dirt should be drawn up around the plant, which we term rounding tobacco. Prime it, and top early at 14 leaves, then down to 10, and very late tobacco, 6 and even as low as 4; let your tobacco get fully ripe before cutting unless there is danger of frost; ripe tobacco cures a prettier colour, and is much sweeter; it is impossible to cure unripe tobacco well. After cutting, which should be split instead of spread, hang on scaffolds 10 days. Do not crowd the tobacco on the scaffold too close, give it good room, say not more than 7 or 8 plants on a stick, and the sticks 5 inches apart. Then house, and fire a little in damp weather; too much is not best, as it gives it too dark a colour, and a smoky scent and taste. When the tobacco is sufficiently cured, bulk down and cover with straw so as it may be in order to strip any time you like. In stripping, there should be four different qualities, and put separate both in the bundles which are tied up, and the rows in which it is put down, which is termed wind-rowing. When you are ready to pack it in hogsheads, put it in as dry order as possible without breaking, as it will bring a much better price.

The ground leaves or lugs should be in higher order than the good tobacco—12 to 1500 weight, is as much as any hogshead we have will hold; 1200 pound hogsheads is the best size. Yellow Prior and Orinoco Tobacco are the sort we generally plant, the Yellow Prior I prefer on heavy land. I have thus very hastily, and in as few words and plain as possible, given you my limited experience and observation in reference to the culture and management of tobacco, which, if you think it entitled to any consideration, is at your disposal.

I have the honor to be,

Yours, very respectfully,

JOHN D. THOM.

COLOMBIAN GUANO.

Dr. Piggot's last communication in the February number of your journal, requires a few remarks.

Hypotheses or theoretical considerations in the abstract have but little interest for your readers, and my reasons for bringing such considerations before them, were to show that phosphates of iron and alumina when applied to soils may be available as manures. This will I think be seen to be reasonably inferred from the facts which I have previously given of the substitutions which have taken place, and which continually occur in nature.

From my investigations and study of the guano rock of the Caribbean Sea Island, together with the geological changes brought about by the substitution of bases among phosphates, I am convinced that my views of the availability of phosphates by plants will be sustained by further investigations, and by the experience of agriculturists.

If I have failed to induce other gentlemen to think with me, I possibly have succeeded in influencing to more liberal views and more philosophical investigations. I am satisfied that the *exact* formation of some of the guano rocks cannot be proved until a greater amount of facts have been obtained, and possibly there may never be sufficient to convince those who are skeptical as to the substitution of phosphates in the cretaceous and tertiary fossils, bones of old grave yards, &c., which is admitted by the greatest chemists. I was surprised that a gentleman of Dr. Piggot's reading would for a moment question the fact.

I must therefore hold to the opinions which I have before expressed, until the presence of phosphate of iron—where phosphate of lime formerly existed—is otherwise accounted for, *not merely denied*.

Having as I think proved that such substitutions have and are taking place in nature, why may they not continue on a large scale, such as they surely have done in the marl districts, and why may not similar changes occur in soils?

Dr. Piggot suggests that I have not been careful in freeing the substance for analysis—particularly the concretion "knocked off" from beneath the roost on Centinella Island—from fragments of the adhering rock, or a pebble; it would be a strange oversight for a chemist to make in a scientific investigation, where the value of the results so much depends upon the careful selection of material for analysis. I regret that Dr. Piggot should bring such a suggestion into your pages; for my own part I am more careful in my analyses. But I should like very much to know how Dr. Piggot accounts for the great quantity of phosphoric acid in the rock of this island; in geological questions, such things must be accounted for, in some demonstrable way. Yours, respectfully, W. J. Taylor.

Philadelphia, February 11th, 1858.

WYANDOTTE CORN.

Uniontown, Carroll Co., Md.,
January 23d, 1858.

To the Editors of the American Farmer:

Gentlemen:—Early last May I called on you to procure a few grains of Wyandotte Corn; you told me you had none; after that I succeeded in obtaining 16 grains, which I planted in my garden, so as to keep off from other corn, and I think I was very successful, considering the manner I planted it—my ground was all taken up but a small corner, and the 16 grains were planted inside of nine feet square—only 12 grains came up and produced 62 ears as fine solid corn as I ever saw—it ripened well and the grains much larger than the seed I planted; the ears from 8 to 12 inches long.—My opinion of the corn is this, that in rich soil and planted 6 feet apart,—one grain in a hill,—and a good season, and the wind does not blow it down,—and no early frost (the season last year suited,) so that it ripens well, that it may yield from 150 to 200 bushels to the acre. If you think my experience is worth publishing you are at liberty to do so.

With much respect, yours, respectfully,

JOSEPH FANTZ.

The Wheat Crop.—We learn from various sections of the country, that the wheat crop, now growing in the ground, presents a very sickly, discouraging appearance. It was sown during the prevalence of a drought, and into a dry and dusty earth, and has had the benefit of but few invigorating rains since. Many wheat fields, indeed most of them, look quite bare, the stocks scarcely rising above the clods, and wearing an exceedingly delicate aspect, so much so, that they will be illy prepared, unless early protected by thick coatings of snow, to resist the sturdy blasts and biting frosts of Winter.—*Hag. Torch.*

[From the Patent Office Report, 1856.]

CALCAREOUS MANURES.

By a *manure*, is meant any fertilizing simple or compound substances, which, when applied to a soil under cultivation, tends to promote the growth and perfection of the plants, in supplying them with such nutriment as that soil may be deficient in: and by *calcareous manures*, those in which lime or magnesia enters, in considerable quantities, into their composition, either before or after they have been exposed for a considerable time to the violence of heat, and have lost their humid or volatile parts, or have been decomposed by the action of the weather, or other influences. The latter comprise those substances usually known under the names of *Lime*, *Chalk*, *Plaster*, or *Gypsum*, *Marl*, *Magnesia*, &c.

In treating of these manures, the writer proposes to confine his remarks principally to their natures, properties, sources, and operations, with directions for their preparation and application to the soil, or to crops, as connected with the leading principles of practical and scientific husbandry. Therefore, it well deserves the most exact and careful attention of a practical farmer, to avail himself of every species of information that will throw any light on their uses, application, and their injurious, as well as beneficial effects, on his soils, manures, and crops.

Lime.

Lime, one of the most widely diffused substances in Nature, called by chemists *prot-oxyd of calcium*, is extensively distributed throughout this earth and its inhabitants, combined principally with carbonic, sulphuric, phosphoric, fluoric, humic and silicic acids in the formation of limestone, marble, chalk, marl, calcareous spar, stalactites, stalagmites, gypsum, phosphorite, organic remains, &c. Notwithstanding the immense quantities of carbonate and sulphate of lime, which constitute so large a proportion of the crust of our globe, it is questioned by some, whether lime should not be looked upon as a characteristic of the animal, rather than the mineral, kingdom of Nature.—For the bony or testaceous skeleton, by which the softer portions of the animal frame are attached, is always found to consist of lime, united either with carbonic or phosphoric acids. The bones of all vertebrated animals (those having backbones) are constituted principally of phosphate of lime, while in the shells of the invertebrate animals, (beetles, crabs, lobsters, oysters, &c.,) the carbonate of lime is the prevalent component. The teeth of animals, also, mainly consist of a phosphate of lime, which, in all cases, is associated with fluoride of calcium in a similar manner as these substances occur in the mineral phosphorite, or native phosphate of lime. Indeed, it is a remarkable fact, that all the great geological formations, of which lime is the prominent ingredient, are found to consist of the aggregate skeletons, shells, or casts of myriads of invertebrate animals, which had existed at some period long before the creation of man.

From the densest and hardest limestone to the softest chalk, the entire mass generally resolves itself ultimately into a congeries of animal remains; and hence the great supply of lime in the mineral state arises from the destruction of its animal sources. The lime, therefore, which exists in Nature, must be looked upon as being continually in a state of passage between the organic and the inorganic kingdoms. The plants that grow upon the soil take up, by dissolution in their juices, salts of lime, which pass into the substance of the animal that feeds upon them, and accumulating in its system, they afford materials for the proper development of the skeletons, the hair, the skin, and the softer parts.

When the animal dies, the blood, muscles, and other tissues, either serve for the nutrition of some other animal, or, being totally decomposed, its elements return again to a mineral state, to be, in after ages, the subject of similar alternations.

In considering the chemical nature of the ash of plants, it is known that lime, in all cases, forms a considerable proportion of its whole weight.—Hence the reason why lime is regarded as a necessary food of plants, and hence, also, one cause of its beneficial influence in general agricultural practice. The quantity of pure lime contained in the crops produced upon one acre, according to Professor Johnston, during a four years' rotation, amounts on an average to 242 pounds, which are equal to about 430 pounds of carbonate of lime in a state of marl, shell-sand, or limestone gravel.—It is obvious therefore, that one of the most intelligible purposes served by this substance as a chemical constituent of the soil, is, to supply this comparatively large quantity which, in some form or other, must enter into the roots of the plants. But all crops do not contain lime in the same proportion, and the quantities are not constant even in the same plant. Wheat, especially, contains much more when it is grown upon land to which lime has been copiously applied, yet, the variable quantities, contained in our economical plants, show that one reason why lime favors the growth of some crops more than others, is, that some actually take up a larger quantity of it in their food. These crops, therefore, require the presence of lime in greater proportion in the soil, in order that they may be able to obtain it so readily that no delay may occur in the performance of those functions, or in the growth of those parts to which lime is indispensable.

This substance is usually obtained by exposing pure limestone or chalk, which are carbonates of lime, to a red heat, and is then popularly known under the names of *stone-lime*, *quicklime*, *hot lime*, *burned lime*, and *caustic lime*. It is also obtained, in an impure state, by burning oyster-shells or the shells of other fish, which converts them into quicklime, and is commonly called *oystershell lime*, or simply *shell-lime*.

When stone-lime is exposed to the air, it rapidly absorbs water, and falls to a pure, white, earthy powder, increasing two or three times its bulk, and forming a hydrate of lime, which is usually known under the name of *air-slacked* or *spontaneously-slacked lime*.

If a little water be sprinkled upon a small piece of well-burned lime, it is instantly absorbed, and the lime slakes, or quenches, and appears quite dry; but, after a few moments, it cracks, swells, and crumbles into a powder of hydrate, popularly known as *slaked lime*, sometimes involving sufficient heat to inflame gunpowder, or to char wood. Burned or quicklime is immediately soluble in water; unburned lime is not so to any appreciable extent. When pure, it is soluble in 635 parts of water at 32° F.; but requires at 60°, 778 parts; at 130°, 972 parts; at 212°, 1,270 parts for its solu-

tion. A pint of water at 32°, dissolves 13¼ grains; at 60°, 11 3-5 grains; and at 212°, 6 7-10 grains. Hence the propriety of employing cold water for the slaking of lime. This degree of solubility is quite sufficient, immediately after liming the land, to provide the plants, which, besides, can only bear a very dilute solution of mineral substances without injury, with an abundant supply of digestible lime; that is, of course, supposing that the requisite quantity of water is present. As this solution permeates the soil in all directions, the other actions, which lime generally is capable of exercising upon the constituents of the soil, commence and are continued here more rapidly than with the unburned kinds of calcareous manures, marl and chalk, for instance, which are first rendered soluble by the humus and the carbonic acid produced by its decomposition.

Clear lime-water has an acrid, slightly-caustic taste, but when boiled, it becomes white or turbid. Exposed to the air, it absorbs carbonic acid, and becomes covered with a crystalline pellicle of carbonate of lime. On breathing into transparent lime-water through a glass tube, it is immediately rendered turbid, or milky, by the carbonate of lime, produced by the carbonic acid of the breath, an excess of which acid, however, dissolves the precipitated lime, and the water again becomes clear. It is in this way that carbonate of lime is held in solution in the water of almost every river and spring.

If lime be perfectly dry, it has little or no tendency to absorb carbonic acid. It requires first to be "air slacked," or "slaked" with water, and then the hydrate is decomposed, the water being expelled by the carbonic acid, the absorption of which is very rapid, until the lime becomes half saturated, when a compound is formed, known under the name of *mild lime*, but after that point, its advancement is very slow. The term *mild* is also applied to lime when it is entirely in a state of carbonate. When strongly heated, lime becomes phosphorescent, and emits a brilliant light, on which account it is sometimes employed for illumination, as in the Drummond and Gurney lights.

Carbonate of Lime.

Pure carbonate of lime, when perfectly dry, which occurs in the form of marble, or common limestone, consists of lime and carbonic acid, in the following proportions:—

	Per cent.
Carbonic acid, - - - - -	43.7
Lime, - - - - - -	56.3
	100

Thus, 100 pounds of carbonate of lime contain 43 7-10 pounds of carbonic acid, and 56 3-10 pounds of lime; or a ton (2,000 pounds) of pure carbonate of lime contain 1,126 pounds of lime.

Bi-carbonate of Lime.

Lime is sometimes combined with a double proportion of carbonic acid gas, in which state it is called a *bi-carbonate*, and to a certain extent is readily soluble in water. Hence, springs are often impregnated with it, and the waters that gush from fissures in lime rocks, distribute it through the soil in their neighborhood, which is a mode Nature very frequently adopts in fertilizing the earth. Here let it be remembered that carbonate of lime, though insoluble in pure water, may be dissolved to a considerable extent in that which is impregnated with carbonic acid gas; and that, when it holds lime in this way, and is exposed to the air for a length of time, or is heated over the fire, the lime will again separate from it more or less completely. In this manner stalactites are formed in caves; substances are petrified in lakes and streams; beds of marl, in some cases, are produced; drains are often choked up with lime; and crusts are deposited at the bottoms of kettles and steam-boilers.

Limestones, however, are seldom pure. They always contain a considerable quantity of other earthy matter, chiefly silica, alumina, magnesia, and oxyd of iron, with a trace of phosphate of lime, sometimes of potash and soda, and often of animal and other organic remains. In limestones of the best quality, the foreign earthy matter or impurity, does not exeed 5 per cent. of the whole, while it is often much less. The chalk and mountain limestones are generally of this kind. In those of inferior quality, it may amount to 12 or 20 per cent.; while many calcareous beds are met with in which the proportion of lime is so small, that they will not burn into agricultural or ordinary building lime, refusing to slake, or fall to powder, when moistened with water. Quicklime, of course, will contain a less amount of lime in proportion to the superiority of the limestone from which it has been burned.

When the carbonate of lime, which is contained in marble, common limestone, or in the shells of oysters and other shell-fish, is exposed to a high temperature, in the open air, the carbonic acid they hold, in combination with other ingredients, is driven off by the heat, and the lime remains behind in a caustic state. They are decomposed more readily when a current of moist air is allowed to pass through the burning mass. Hence, on a large scale, this process is performed in kilns. A ton (2,000 pounds) of good limestone yields 1,126 pounds of caustic lime, the weight of which per bushel varies with the kind of stone employed, and with the manner in which it is burned. In some varieties of lime, a bushel does not weigh more than 75 pounds; while in others, it will weigh nearly or quite 100 pounds. This difference shows how uncertain the quantity of lime applied to the land may be when it is estimated by the bushel.—Therefore it should be bought and applied by weight.

The following table by Professor Johnston exhibits the chemical changes which a ton (2,240 pounds) of pure limestone undergoes, and the relative proportions in which the several compounds exist in it after it has been burned, slaked, and then exposed to the air, or mixed with the soil.—

Composition.	Limestone.	After burning.	After slaking.	Spontaneously slacked	Exposed to air or in the soil.
	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Lime,.....	11¼	11¼	11¼	11¼	11¼
Carbonic acid,.....	8¾	.....	.....	2¾	.....
Water, ...	.....	.....	3½	1¾	8¾
Total weight,....	20	11¼	14¾	15¾	20

Burning and Slaking.—The form of kilns employed in burning lime varies; some being constructed inside in the shape of a hogshead, or of an egg, opened a little at each end, with the diameter at the bottom small, gradually widening towards the middle, and then contracting again toward the top; while others are made in the form

of a sugar-loaf, with the small end down; others, again, are of an oblong-oval, in the ground-plan, as well as at the middle and top. The first of these forms is most generally in use, and when the sides are nearly perpendicular, it is observed that less fuel is necessary in consequence of the great degree of heat that is created, above that which occurs in kilns formed in the shape of a sugar-loaf reversed. Near the bottom of large kilns, two or more openings are made for admitting the air necessary for supplying oxygen to the fire, and for dragging out the lime after it is burned.

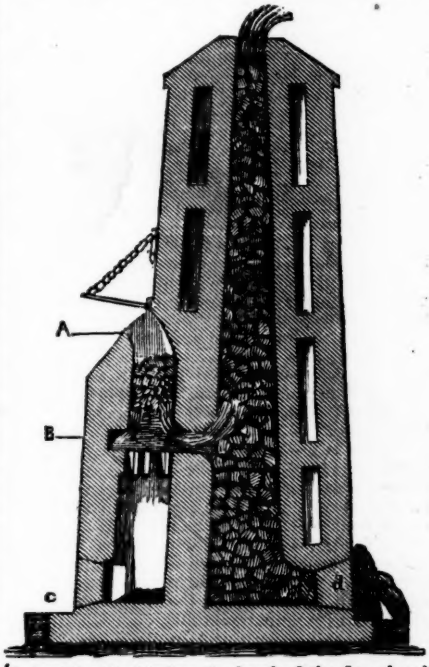
Lime-kilns may be built either of stone or bricks; but the latter are considered preferable, particularly for the inside lining, as they are better adapted to stand a high degree of heat. They should always be situated at, or near, the quarry, and if possible, in the side of a cliff or bank; or they may be furnished with a "ramp," or inclined plane of earth or stone, for carting up the fuel and limestone to their tops.

As the improvement of kilns is a matter of great national importance, especially since the use of lime as a manure has become so general, and more particularly so as the price of it is every day increasing, owing to the increased and increasing demand for fuel, I would offer one that was invented by our distinguished countryman Benjamin Thompson, (Count Rumford,) and erected at Dublin, in Ireland, which, as far as is known, answered the Count's expectations, with a view of suggesting such improvements or alterations as may tend to bring it, or something resembling it, into general use. In order that the inventor's ideas of what he calls a "perpetual" kiln may be clearly understood, I will give a description of it with a section as shown in the accompanying diagram. The objects which he had in view were, first, to cause the fuel to burn in such a manner as to consume the smoke, which was effected by obliging it to descend and pass through the fire, in order that as much heat as possible might be generated. Secondly, to cause the flame and hot vapor, which rise from the fire, to come in contact with the limestone by a very large surface, in order to economize the heat, and prevent its going off into the atmosphere, which was done by making the body of the kiln in the form of a hollow, truncated cone, and very high in proportion to its diameter; and by filling it up quite to the top with limestone, the fire being made to enter near the bottom of the cone.—Thirdly, to make the process of burning lime perpetual, in order to prevent the waste of heat, which unavoidably attends the cooling of the kiln in emptying and filling it, when to perform that operation it is necessary to put out the fire. And fourthly, to contrive matters so that the lime in which the process of burning is just finished, and which, of course, is still intensely hot, may, in cooling, be made to give off its caloric in such a manner as to assist in heating the fresh quantity of limestone, with which the kiln is replenished, as often as a portion of lime is taken out of it.

To effect those purposes, the fuel is not mixed with the limestone, but is burned in a close fire-place, which opens into one side of the kiln, some distance above the bottom of it. For large kilns, on these principles, there may be several fire-places, all opening into the same cone, and situated on different sides of it, which fire-places may be constructed and regulated like those of the furnaces used for burning porcelain or earthen-ware.

At the bottom of the kiln, there is a door, which is occasionally opened to take out the lime.—When, in consequence of a portion of lime being drawn out of the kiln, its contents settle down, or subside, the empty space in the upper part of the kiln, which is occasioned by the removal of the burned lime, is immediately filled up with fresh stone. As soon as a portion of lime is taken away, the door by which it is removed, must be immediately shut, and the joinings well closed with moist clay, to prevent a draft of cold air through the kiln. A small opening, however, should be left for reasons presently to be explained.

As the fire enters the kiln at some distance from the bottom, and as the flame rises as soon as it comes into this cavity, the lower part



of the kiln (that below the level of the fire-place) is occupied by lime already burned; and as this lime is intensely hot, when, on a portion of lime being removed from below, it descends into this part of the kiln, and as the air in the kiln, to which it communicates its heat, must rise upward in consequence of its being heated, and pass off through the opening at the top of the kiln, this lime in cooling, by this contrivance, is made to assist in heating the fresh portion of cold limestone with which the kiln is charged. To facilitate this communication of heat from the red-hot lime just burned to the limestone above, in the upper part of the kiln, a gentle draft of air through the kiln, from the bottom to the top of it, must be established, which is done by leaving an opening in the door below, by which the cold air from without may be suffered to enter the kiln. This opening (which should be furnished with a register of some kind

or other) must be very small; otherwise, it will occasion too strong a draft of cold air into the kiln, and do more harm than good; and it will probably be found to be best to close it entirely, after the lime in the lower part of the kiln has parted with a certain proportion of its heat.

The preceding description gives a general idea of the manner in which this kiln is made to operate while in the act of calcination. The following will refer to the section as being descriptive of the several parts of it: The height of the kiln is 15 feet, its internal diameter below, 2 feet, and above, 9 inches. In order more effectually to confine the heat, its walls, which are of bricks and very thin, are double, and the cavity between them is filled with dry wood-ashes. To give greater strength to the fabric, these two walls are connected in different places by horizontal layers of bricks which unite them firmly.

A, is the opening by which the fuel is put into the fire-place. Through this opening, the air descends which feeds the fire. The fire-place is represented nearly full of coal; the flame passing off laterally into the cavity of the kiln, by an opening made for that purpose at the bottom of the fire-place. The opening above, by which the fuel is introduced into the fire-place, is covered by a plate of iron, movable on hinges; which plate, by being lifed up more or less by means of a chain, serves as a register for regulating the fire. A section of this plate and of the chain by which it is supported are shown in the figure.

B, is an opening in the front wall of the fire-place, which serves occasionally for cleaning out the fire-place, as also for cleaning out the opening by which the flame passes from the fire-place into the kiln. This opening, which must never be quite closed, serves likewise for admitting a small quantity of air to pass horizontally into the fire-place. A small proportion of air admitted in this manner has been found to be useful and even necessary in fire-places, in which, in order to consume the smoke, the flame is made to descend. Several small holes for this purpose, fitted with conical stoppers, may be made in different parts of the front wall of the fire-place. At the bottom of the fire-place is a grate, constructed of bricks, placed edgewise, and under this grate, there is an ash-pit; but as no air must be permitted to pass up through this grate into the fire place, the ash-pit door, *C*, is kept constantly closed, being only opened occasionally to remove the ashes.

D, is the opening by which the lime is taken out of the kiln; which opening must be kept well closed, in order to prevent a draft of cold air through the kiln.

As only so much lime must be removed at once as is contained in that part of the kiln which lies below the level of the bottom of the fire-place, to be able to ascertain when the proper quantity is taken away, the lime, as it comes out of the kiln, may be directed into a pit, sunk in the ground in front of the opening, by which the lime is removed, this pit being made of a proper size to serve as a measure. While the lime is removing from the bottom of the kiln, fresh lime-stone should be put into it above; and during this operation the fire may be dampened by closing the top of the fire-place with its iron-plate. Should it be found necessary, the fire, and the distribution of the heat, may, in burning the lime, be further regulated by closing more or less the opening at the top of the lime-kiln with a flat piece of fire-stone, or a plate of cast-iron. The double walls of the kiln, and the void space between them, as also the horizontal layers of bricks by which they are united, are clearly and distinctly expressed in the figure. The kiln is represented as being nearly filled with limestone. Another kiln of approved construction, suitable for burning lime with coal, or other dry, smokeless fuel, is denoted by the next diagram. It is supposed to be built at the side of a bank or cliff, of a circular form within, 32 feet high from the iron grating over the pits, 3 feet in diameter at the top, and 7 feet across, near the middle, at a point 18 feet above the grating. The walls are designed to be built of stone, from 3 to 6 feet thick, and lined with bricks. Below the shaft, or hollow of the kiln, are two arches or pits, each 3 feet wide and 3 feet high, divided by a partition wall, 18 inches thick, extending up the shaft 10 feet. About 18 inches from each arch, or pit, is an oven, say 2½ feet square, where coal is used for fuel, and somewhat deeper, where wood is employed, communicating with the shafts by narrow flues. Below the shafts, are two movable iron grates for dragging out the lime after it is burned. The ovens, as well as the arches under the shaft, are provided with iron doors, which are to be closed whenever it is desired to stop the draft.—An iron cap, or cover, is also provided to be placed over the top of the kiln, to prevent the escape of more heat than is necessary to keep up the combustion of the fuel. This cap is also furnished with a damper, or valve, for regulating the draft.

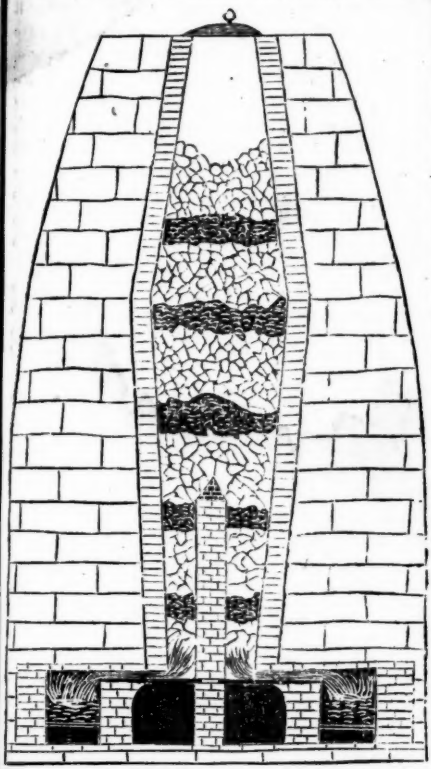
In a kiln like this, it is obvious that the limestone can be well burned, with a comparatively small amount of fuel, in winter as well as in summer, and that the farmer or others can be supplied with lime, at any time, without extinguishing the fire. All that is necessary to be done, is, to supply the broken limestone, and the fuel at the top of the kiln, and rake out the burned lime through the iron grate, or opening, at the bottom, as fast as occasion may require. In case it may be necessary to check the burning for a time, nothing more need be done than to close the iron doors at the bottom of the kiln, and the cover, or cap, at the top, when the fire may be kept alive for four or five days.

When the kiln is to be filled, the limestone should be broken into pieces about the size of a man's fist, and laid in alternate layers with the coal, usually in the proportion of three of the former to one of the latter; but as limestones vary much in their character, the proper quantity of fuel can only be regulated by trial. The coal should not be placed nearer the lining of the kiln than 8 or 9 inches, in order that the bricks may not melt nor burn.

When newly-burned lime is taken from the kiln, it has a strong tendency to "drink in" and combine with water. Hence, when exposed to the atmosphere, or covered over with sods in a shallow pit, it slowly absorbs moisture from the air, without developing much heat, increases in weight, swells, and gradually falls to powder. In this case, it is said to be *air-slacked*, or *spontaneously-slacked*. In rich limes, the increase of bulk may be from 3 to 3½ times; but in the poorer varieties, or such as contain much foreign matter, the increase may be less than twice their bulk.

If water be sprinkled or thrown upon the kind of lime named above, or if it be immersed in wa-

ter for a short time, and then withdrawn, it absorbs the water, becomes hot, cracks, swells,



throws off much watery vapor, and falls down in a short time to a bulky, more or less white, and almost impalpable powder. When the thirsty lime has thus fallen, it is said to be *slaked*, or *quenched*. If more water be added, it is no longer "drunk in," but forms with the lime a paste; and, if sharp sand be added, a *mortar* is formed. In slaking, the water combines chemically with the lime; 3 pounds of which, when pure, take up a pound of water, and give 4 pounds of pulverulent, slaked lime.—The more uniform and complete the operation of slaking, the finer the powder of the lime will be, and consequently the more equally it may be incorporated with the soil. Either excess or deficiency of water interferes with the uniform slaking. These effects are more or less rapid and striking, according to the quality of the lime, and the time that has been allowed to elapse after the burning, before the water was applied. All lime becomes difficult to slake when it has been for a long time exposed to the air. When the slaking is rapid, as in the rich limes, the heat produced is sufficient to kindle gunpowder strewn upon it, and the increase of bulk as before stated is from 2 to 3½ times. If the water be thrown on so rapidly or in such quantity as to chill the lime or any part of it, the powder will be gritty, will contain many little lumps, which refuse to slake, and will also be less bulky and less minutely divided, and therefore less fitted either for agricultural or building purposes.

It may be received as a general rule, however, that the best mode of slacking lime for agricultural purposes, is that which gives it the greatest, and reduces it to the most minute state of division. For the following reasons, the spontaneous method is preferred by many, as it is thought to be more economical and has a better effect on the crops to which it is applied. First, it causes the lime to fall to the finest powder; and secondly, it is the least expensive, requiring less care and attention, and exposes the lime least to become "chilled" and gritty; but when thus left to itself, it should be laid up in heaps, covered with sods, and allowed to remain a sufficient time to slack, in order to prevent the surface of the heaps from being chilled or the whole converted into mortar by large or continued falls of rain; also to exclude the too free access of the air, which gradually brings back the lime to a half state of carbonate. Hence, the lime may be laid up in heaps, in the field in the winter, covered with sods, and left until it has completely fallen, or until the time is convenient for laying it upon the land, in spring or summer, when preparing for the ensuing crops.

[We will continue the subject, giving in our next, the application of the lime to the land.—Ed. Am. Far.]

EXPERIMENTS IN HOG FEEDING.

To the Editors of the American Farmer:

Believing that each subscriber to an agricultural journal, should endeavor to make some return for the information he receives, I send the following experiment, in fattening pork. I had ten hogs, which I separated into two lots, putting five of them in a pen, with board floor; and turning the other five into a yard, of about one sixth of an acre. Each lot was as near as could be, similar to the other, and each was fed as much corn as they would eat, for 13 days, (being in good order when put up,) at that time, the pen hogs weighed 887 lbs., they gained 114 lbs. or 22 4-5 lbs. per hog.

The yard hogs weighed (when put up) 886 lbs., they gained 137. lbs. or 27 2-5 lbs. per hog. The above weights, gross. Each lot lost 278 lbs. by being neated, the pen making 723 neat, and the yard 745, having each lost considerably over one-fourth. The pen consumed 19 bushels of ears; the yard, 21 bushels.

The result is suggestive of a number of interesting queries, which from the data given, each one may answer for himself. W. H. G.

Frederick Co. Va.

Tough times in the West.—A subscriber to the "Farmer" in Lincoln Co. Mo., writes us as follows, under date of Feb. 13:—

"Although newspapers said wheat last year was abundant, our crop was a failure; I raised 99 bushels off of same ground, that the year before yielded 437 bushels. Our corn crop was abundant, but is rotting so badly, that we are alarmed about our chance for seed corn. Our pork is spoiling owing to the warm weather in January. This morning we have 3 inches snow, and weather cold. Ice houses all filled yesterday and day before. There is no money afloat, and had not I received a small bill, for attending a sick child last fall, I could not pay my subscription now; as it is I am truly rejoiced to be able to be forthcoming even with such as it is."

AMERICAN FARMER.

Baltimore, March 1, 1858.

TERMS OF THE AMERICAN FARMER.

Per Annum, $1 in advance—6 copies for $5—13 copies for $10—30 copies for $20.

ADERTISEMENTS.—For 1 square of 8 lines, for each insertion, $1—1 square per annum, $10—larger advertisements in proportion—for a page, $100 per annum; a single insertion, $15, and $12 50 for each subsequent insertion, not exceeding five. Address,

S. SANDS & WORTHINGTON,
Publishers of the "American Farmer,"
At the *State Agricultural Society's Rooms*, 128 Baltimore-st.
Over the "American Office," 5th door from North-st.

REDUCTION IN THE PRICE OF GUANO.

During the past month, the Messrs. Barreda & Bro., announced to the public, that—"In consideration of the decline in the prices of Agricultural products, and of the recent financial and commercial events in this country, which will naturally affect unfavorably the interests of Agriculturists and consumers of Peruvian Guano, the Peruvian Government has directed us to reduce "TEN DOLLARS" per ton from the actual prices of this fertilizer for the present season."

It is shrewdly suspected, that the introduction of a new article from an island in the Pacific, called the "*California Guano*," analyses of which by several chemists appeared in our last, (page 271)—added to the "*grip*" in the Peruvian treasury,—with fears that the Californian would, to a very great extent, take the place of the Peruvian, has had more to do with the reduction in the price of the latter than any consideration for the farmer's interest.

This California Guano comes nearest to the peculiarities of the Peruvian (the ammonia in it averaging about 12 per cent.) than any thing of the kind yet introduced, and we hope our farmers and planters will very generally give it a trial, if only on a small scale, on their Spring crops. It is not as rich in phosphates as the Colombian or Mexican, but contains other valuable ingredients. A small addition to it of a new variety of Colombian, called *Nevassa*, which is very rich in phosphates, or a good quality of Mexican Guano, will probably make it a cheaper and more effective guano than Peruvian alone. Other guanoes it will be seen, have also declined in price, in consequence of this change in Peruvian.

The following are Barreda & Bro's new rates:

From	1 to	5 tons	$60	per ton of 2,240 lb.	payable	cash.
"	6 to	10 "	58	" "	"	"
"	11 to	20 "	57	" "	"	"
"	21 to	30 "	56	" "	"	"
"	31 to	50 "	55	" "	"	"
"	51 to	200 "	55,	30 days from date of delivery.		
"	200 to	1,000 tons,	55,	60 "	"	"
"	1,100	upwards	55,	90 "	"	"

If Messrs. Barreda would put the price so that the *farmer* could obtain it at $50, the quantity consumed would be greatly increased.

PROFITABLE FARMING.

Farming to be profitable, must be thorough. It must be well done in all its departments. To have good land, or to expend money in buying manures, and have the ground insufficiently drained, and imperfectly ploughed, and carelessly cultivated is very wasteful economy. On the other hand, to be at the cost of fencing and draining, and thoroughly ploughing and cultivating a poor and unmanured soil, is a heart-breaking business. In either case the work is half done, and had as well have been left undone. It does not pay. In farming, as in other affairs, "a thing worth doing at all, is worth doing well."

The first necessity of a soil for cropping, is its thorough breaking and loosening to a certain depth not merely to make room for the roots of plants to extend and ramify, but to ensure to them *ample and fresh supplies of air and water*.

Water is essential, both as the food of plants and as the medium through which its food is administered to the plant. It must be always and everywhere present to the roots. Nor must it be stagnant water; which if not directly poisonous, becomes indirectly noxious by preventing the influence of fresh air. It must be neither too much nor too little; just so much as a well constituted soil will hold by its power of capillary attraction and be not too wet or too dry. The proper preparation of the soil therefore, implies drainage wherever water lies within a few inches of the natural extension of the roots. Otherwise there will be excess of moisture; evaporation will make the soil cold and unkind. The rain water, instead of passing through the soil, warming it and depositing new supplies of ammonia and carbonic acid, and opening the passages for atmospheric influence, flows away over the surface, wasting its stores, and washing away the finer particles of the soil.

The proper preparation of the land for the growth of plants implies next, the turning and breaking with the plough to a depth not less than six inches, and as near to twelve as may be done by gradual deepening. Nor need there be so much timidity on this point of turning up the sub-soil as is usually exhibited. It may occasionally contain principles hurtful to vegetation until it has been for some time exposed to the action of the atmosphere. It is better therefore that such ploughing be done early; if before or during the winter, the better. With all ordinary soils, however, we should have no fear of breaking up, even in spring, to the depth of eight or ten inches, and should expect with confidence an immediate increase of crop. The proper after-cultivation of the crop will keep this sub-soil on the surface, and not mix it during the first season with the body of the soil. It will thus be out of the range of the roots of plants, and act rather as a mulch for the more fertile soil. A deep soil is absolutely essential as a safe-guard against the exces-

sive droughts of our summers. It is a protection alike against excess and deficiency of moisture. It is like the woollen cloak of the traveller in Æsop, a defence against the blasting winds of winter, and the blighting heat of summer. By its greater power of absorption and retention, it lays up more ample stores from the bounteous atmosphere. When we consider well the increased capabilities, in this respect, of a well deepened soil, its powers of receiving and holding for future use the elements which are furnished from the atmosphere, and that these elements constitute more than 90 per cent. of all cultivated plants, and bear in mind too, that the subsoil contains all the mineral elements which we expect to find in a new and uncultivated soil, as much at least as the surface-soil had originally, and more that has been washed down to it by the rains, we almost excuse the man who considers deep ploughing a universal remedy for the faults of bad cultivation.

But profitable culture requires not only due preparation of the soil, but ample supplies of the food of plants in an available condition. Plants as well as animals must be fed, and well fed, if we would grow them profitably. They must have the right sort of food, and enough of it. It is the business of the intelligent farmer to ascertain as far as he can, what elements of food exist abundantly in his soil, and what therefore, it is his interest to supply. Soil analysis, which promised so much in this direction, years ago, will not help him. It is for all ordinary practical purposes of no avail. But the indications of chemical investigation may prove useful.

Of the organic food of plants, water (composed of oxygen and hydrogen,) and carbonic acid, (carbon and oxygen,) furnish a large portion of the elements, and these are supplied abundantly from natural sources. That portion of the organic elements which seems to be deficient in the natural supply, is nitrogen. Though forming a large portion of the bulk of the atmosphere, it does not appear that plants are capable of appropriating it from that source, or that it yields anything to their growth except so far as it may exist in the air uncombined, or in the soil, the result of animal or vegetable decay, and conveyed in the dews or rains. That the supply from these sources is insufficient, if not for food, yet for other useful and necessary purposes, except in highly cultivated soils, rich in humus, is made apparent by the extraordinary effects usually produced by nitrogenous manures. However undecided we may be, as to how such manures act, experience has determined their value, and fixed the price of ammonia above that of any other element of fertility.

Of the mineral elements, that which is esteemed of most value, on account of its scarceness, especially upon soils which have been devoted to grain culture, and its necessity for all cultivated plants, is phosphoric acid. This is supplied in bones and the Mexican guanos chiefly, and regulates their market value. Other mineral manures, most frequently used, are carbonate of lime, sulphate of lime, (plaister of paris,) and potash, (usually in wood-ashes.) Of all these the farmer can best judge for himself which is most likely to afford his crops the deficient elements of nutrition. A large portion of cultivators have come to consider it essential to use something beyond the farm supplies of manure. It is a question of economy of great consequence to determine for what he shall spend his money. He should use the best information and the best judgment he can upon this point. But let him not fear to be liberal. Let him be sure not to withhold that which is essential in the fear of having to pay for what is not essential. If he will work his land well he need not be afraid of the cost of manuring well. These two grand elements of success must co-operate if we will farm profitably.

PLAISTER OF PARIS.

Plaister of Paris, or Gypsum, (Sulphate of Lime,) when it first came into use, and for many years after, was as marvellous in its effects, and excited as much interest in the agricultural community as of late years guano has done. Has it ceased to act as it did in the beginning, and why? Or do we use it as a habit and presume we get the worth of our money without caring to know by the most careless experiment whether we receive any benefit from its use? Has the land by repeated dressings, a store of it laid up for years to come, and does the guano we are now using supply other deficiencies of the soil which the very use of plaister, and the crops it has caused to grow, have brought about? If it fails now to produce its early effects, it may be a lesson to us that Guano may fail us too. Let it be borne in mind too, that Plaister was used directly in the growth of clover, producing thereby a permanent amelioration, and that the extra crops of wheat, and other crops were its indirect fruits, through this general amelioration of the soil. Guano is employed almost exclusively in the direct production of grain and other crops at the immediate expense of the soil, and making comparatively very small returns for its improvement. We hear already that it is failing in its wonted potency, and we warn our readers as we have done before that they may find too soon, the last state of their fields worse than the first. We have the highest opinion of the value of this fertilizer, but its legitimate use is the improvement of the land first, by the growth of grasses, and then the increase of crops in consequence. But farmers are impatient of results.—They are not willing to trust their lands with their money, but must have their own with usury on the first possible occasion. It is short sighted policy.

But our object is to call attention to this valuable and very cheap fertilizer—plaister. It is very unwisely overlooked in the eager search for fertilizers. We have no reason to believe that it has failed to act where it has once acted, though the effects may be less apparent, and we do think there are large districts in which it has never been used, where it might be introduced with great advantage. It is at any rate worth the experiment.

Nothing was better established than the extraordinary effects of Gypsum in the regeneration of whole districts of the most impoverished land.—We find in the "Agricultural Inquiries" of Judge Peters, of Pennsylvania, on the action of Plaister, the following account of the improvements in Loudon Co. Va., now justly celebrated as one of the finest agricultural regions of the country. The same descriptions will apply to extensive portions of Virginia, Pennsylvania, Maryland and other States.

"The Plaister of Paris has created in that county an entire renovation of their soil; which was worn out by long cultivation and bad systems. Much of it was not originally of the first quality; their bottom lands excepted. The use of gypsum began in that county about twenty years ago, (about the year 1790.) The difficulties attending its introduction were similar to those prevailing in Pennsylvania, in the infancy of this great auxiliary to our agricultural prosperity. Its progress was more rapid, when conviction followed a few practical proofs. *Now* their zeal is greater than that existing here. They have the most solid reasons for entertaining the highest opinion of the capacities of plaister. It has substituted plenty and comfort, in place of want and scanty subsistence. Their lands have in many instances, *quadrupled* in value, their stocks of domestic animals have wonderfully increased, and their barns and granaries are filled."

"I do not discover any doubts of its constantly ameliorating, instead of exhausting the soil.—Lands producing in their exhausted state, only seven bushels of corn and five of wheat to the acre, have been made by plaster alone with clover crops, to bring forty bushels of the former and thirty of the latter, per acre, and their fertility remains on the advance."

"The valuable properties of plaister, are so well established, that you might as well ask a man if bread and meat were any use to a labourer, as to ask him if plaister is of any use to his land. He would answer the one as quickly as the other in the affirmative. If land is for sale, the only object seems whether it lies well, and is well watered. Its being poor or rich, makes very little difference in the price; as it is so well known that one course of red clover, well plaistered for one or two years, puts the ground in good heart for any crop."

"In fact, the *clover husbandry*, with its almost magical adjunct—the plaister, does everything for exhausted lands, and much for any other."

The same sort of testimony from such writers as Col. John Taylor, of Va., Thomas Moore, of Montgomery Co., Md., Judge Peters, and his numerous correspondents in Pennsylvania, maintains the value of this fertilizer to the fullest extent here claimed. They speak of crops doubled, quadrupled, and sometimes a clover crop increased eight-fold by a single dressing of Plaister.

The quantity used varied from half a bushel to three bushels per acre. But then, as now, one bushel was the usual quantity.

For the kind of crop on which plaister acts with most effect, the red clover stands pre-eminent. It is by means of its action upon this most valuable improver, that the extraordinary work of regeneration, consequent upon the use of plaister was effected. While upon soils suited to its action, the effect upon clover, however used, was always remarkable, one farmer thought the product was increased from 500 to 4000 lbs. of hay per acre.

But its effects were by no means confined to this crop. Col. Taylor, found it valuable upon lands too light to produce red clover advantageously, in promoting very greatly the growth of the bird-foot clover, which is the spontaneous growth of such soils in many sections—coming up in the Fall upon the corn fields, and maturing the following year in June—when it falls and makes a dense covering, through which the crab grass springs and makes fine fall pasturage. Col. T. states that he lost a crop of wheat by the dense growth of the bird-foot clover, in consequence of an application to it of Plaister in the Fall.

Its effect is very great likewise, upon that valuable renovator the field-pea—a crop which has done and is capable of doing as much for our more Southern, as the red-clover for the Middle Atlantic States.

As to its immediate influence upon other crops, it is conceded that it has no good effect upon wheat and other small grains, except that many think the wetting the seed, and drying with plaister, gives the young plants a vigorous start. This practice is recommended also, and very much practiced as regards corn, as well as potatoes. Its effect upon tobacco is usually very decided. Many persons use it upon tobacco beds, but others object to it upon the ground that it makes the plants so succulent and tender, that they will not bear transplanting so well. Some planters broadcast their ground with it before striking up the hills for planting, but the usual method is to drop about a tea-spoonful upon the young plant just after the first weeding. The effect is frequently very striking, in the quick starting and growth of the crop. This effect is apparently whimsical, however, as with other crops, and seems to depend not only upon the sort of soil, but upon its present condition. In a field of tobacco, we left out rows at equal distances. Where the soil was free, and in thorough order, almost too light to take clover kindly, there was no perceptible effect except in the colour of the plants. Where there was no plaister the growth was equal in all respects, but had throughout a yellowish

cast distinguishing them very plainly from the dark green colour of those which were plaistered. At a distance of not more than a hundred and fifty rows, on a somewhat closer soil, the growth of that unplaistered was certainly not one-fourth of the other.

It is generally believed to act well upon corn. Besides rolling the seed, many practice sowing it broadcast over the crop. It has been questioned as regards this practice, whether it does not make an increase of fodder, without a corresponding increase of grain. The better opinion, however, is in favor of its use, but the application is made when the corn is just so high, that the sower may conveniently cast it over the tops of the plants.—It is mentioned by one of Judge Peters' correspondents that a crop to which the application was made when in tassel was increased several barrels per acre. It is used advantageously too upon potatoes, turnips, and other summer crops, being sprinkled lightly on the plants after they come up.

As to the time and manner of application, on clover, the general opinion in which we concur, is that it acts more efficiently when applied in Spring after vegetation has started—many believe that its action is always greater when a considerable portion falls on the leaves of the growing plants, but this is by no means a universal belief. It is thought by some that the plaister being difficult of solution should be sown very early, before vegetation has begun, in order to secure its prompt action. It is sown usually on the young clover soon after it makes its appearance from the seed, though some postpone sowing till after harvest when the grain crop is out of the way. The second year it is sown when the clover has begun to grow.

The action of plaister has been found to vary much with the character of the soil. It produces little or no effect on the stiffer clays, none upon meadow lands not thoroughly drained. Its greatest effect is upon a free loam, such as we find by experience best adapted to the growth of clover, and it acts well upon lighter soils. Its apparent failure upon such soils, where such is the case, may be owing to the difficulty of getting a "set" of clover. The field pea, or the natural growth of bird-foot clover, or the Magothy Bay Bean, called in some sections "partridge pea," should be used as a substitute for the clover on such lands. Upon these crops the action of plaister would probably contribute as generously to the improvement of the soil, as in the other case with clover.

We have thus far spoken of the use and benefits of plaister, as we gather them from our own experience and observation, and that of others, and in a strictly practical way. The theory of its action is a matter of interesting speculation, but is so far from being satisfactorily settled, as to make it of little practical importance. It is a chemical combination of 32½ parts of lime, 46½ sulphuric acid, and 21 of water. Both lime and sulphur being constituents of plants, it may be useful by supplying either one or the other, or both, when there is a deficiency in the soil, and thus act directly as the food of plants. The theory of Liebig, that it acts by absorbing and fixing the ammonia brought from the atmosphere is now most commonly accepted. The sulphuric acid is thought to act indirectly by the preservation of this valuable element of fertility. It is moreover said by Stockhardt to set free soluble ammonia from the insoluble humous portions of the soil. Ingenhaus, in an essay "on the food of plants and renovation of soils," published in 1796, maintained that the great element of the food of plants was *carbonic acid*, and attributed the action of all manures to their disengagement of carbonic acid in the process of putrefaction. His theory of the action of plaister was that the sulphuric acid by its action sets free carbonic acid from its combinations in the soil and supplies it to the growing plants.—This theory is as ingenious as that of Liebig perhaps, but neither of them, nor any other that we have seen is consistent with some of the remarkable phenomena which the action of this fertilizer exhibits. Ammonia is a universal fertilizer, but if the theory of Liebig is correct, how shall we account for the extraordinary difference in its action upon different soils, being scarcely less than miraculous upon a certain class of soils and universally inert upon another class. The opinion expressed by Judge Peters, fifty years ago, that the manner in which plaister acts, will forever remain a mystery seems to be verified thus far.

PROLIFIC CORN.

It is to be hoped that by the aid of the varieties of Prolific Corn being introduced, that all our corn growers will soon be able to raise the quantity attained per acre by Dr. Parker, of South Carolina, an attested account of which we give in this number. We last month noticed the prolific qualities of the Peabody corn, the value of which has been so well attested, and the character of Mr. Peabody so unimpeachable, that we deemed it advisable to try and introduce it into our State and neighborhood, and have procured a couple of bushels, at a cost of nearly $30 for the lot, which we are selling to pay expenses, at say 50 cents a pint, and giving away small samples to those who wish to get into the seed. We could have sold the lot soon after it arrived, to one or two parties, but declined, as that would defeat our object in sending for it, which was to disseminate it as extensively as possible.

We have since received a communication from Mr. Deas, of S. C., giving a description of another variety, a sample of which he has sent us, of which we have ordered the same quantity as the Peabody, and will dispose of it in same manner, and price. Those who wish to have it sent by mail, must bea

in mind, that our wiseacres at Washington, in framing the postage law, permitted seed sent by mail to be charged as *letter* postage, instead of pamphlet, the farmers, as usual, having no one to look after their interests, in such cases. Mr. D. also sends a sample of a new (to us) variety of Barley, which he thus describes; the grain, sown, is not to be compared to a sample at our last Show, for which a premium was awarded to Dr. S. P. Smith, of Cumberland:—Mr. Deas, says:—

"I have by me a small parcel of seed, the *Java Barley*, that is truly prolific. I had it sown early in February, 2 feet drills and 6 inches, seed from seed; its luxuriant growth attracted my attention, had it cut, giving an average of 79¾ ears to each seed.—My notes kept at the time 62, 94, 83; in all 239 ears, giving the average of 79¾ ears to each seed.

"I also have a few bushels of the *Camanche Corn*, which I prefer to the Wyandotte, it standing up better, more prolific, as you will see by a notice taken from the Savannah News, which is enclosed. The grain is more flinty, and I do suppose will answer with you; I had no directions, therefore sowed too close; I am inclined to think 5 by 4 feet (1 grain,) would be the proper distance; if so, one quart would be sufficient for an acre; if the first planting proves a stand:—

"*Prolific Corn.*—Mr. Anderson brought to our office yesterday a corn-stalk, or rather a collection of stalks, from a single grain, containing twenty ears. The variety of corn sends out suckers from the roots, each of which produces one or two ears. The specimen before us has ten separate stalks, and twenty ears. Two more stalks, containing three ears, were accidentally broken off. Mr. H. informs us that he had another and larger stalk, containing thirty-one ears, which was blown down one night, and fell a prey to the fowls. This corn was raised on the plantation of George Wymberly Jones, Esq., on the Isle of Hope, and is from seed obtained originally from the Camanche Indians. In looking at the specimen before us, we can credit the almost marvellous stories told of its productiveness, such as gathering half a peck from every grain planted. The corn will remain in our counting room during the morning, for the inspection of those who take an interest in agricultural productions."—*Sav. News*

A NEW BREED OF SHEEP.—In our last, we noticed the fact, taken from an exchange, that a new breed of Sheep had been introduced into this country, from China. A friend in Virginia, wishing to know more of the matter, and to purchase some of the breed, if found desirable for the South, induced us to forward a letter to our friend Sandford, of the Boston Cultivator, enquiring about this new breed—who informs us that they are not worthy of attention; that they are nothing more than the so-called Nankin, Tartar, or Chinese Sheep, the fleece of which is almost worthless, on account of a growth of stiff coarse hair, with which it is intermingled, all over the body. An attempt to make a speculation out of these sheep, by cros-ing them with the Leicester breed, a short time since, was a failure. On the whole, this may be considered another attempt to humbug the farmers, and we lose no time in aiding to stop the imposition.

DISEASES OF HOGS.

D. W. Naille, Esq., of Frederick county, Md., writes us that he recently "transferred a pen of fattening hogs from a pen wherein their bed was on the ground, to one wherein their bed was on a plank floor about two feet above the ground, with but slight cracks between planks—in 10 days several of them were attacked with swelling about the throat and difficulty of breathing." Supposing that they had taken cold by change of bed, he administered ashes freely in their food, also Fromfield & Co's Cattle Powders, and tar applied to their troughs, by which half of them were saved. He had never seen this prescription recommended, when he applied it—he is satisfied that even a hog can take cold under certain circumstances, and that such was the case with his hogs. Mr. N. says that the disease has made frightful havoc among the hogs, and fears that it must shorten the quantity of bacon before next fall. Many farmers had to buy their meat.

We very much doubt, whether the disease which has attacked Mr. Naille's hogs, is the same that is making such havoc in the West and elsewhere, if it is caused, as he supposes, by the change in their bedding. The epidemic now raging, has been as virulent in the hottest, as it has is in the cold weather.

PUBLIC DOCUMENTS.—We are indebted to Hon. Mr. Partridge, Sec'y of State, Col. Kimmell and Hon. Mr. Wallis, of the Senate, and E. L. Rodgers, Esq., of the Maryland House Delegates, for public Documents—one of which is a report of the Inspector of Guano, giving the amount imported during the past two years, the several kinds, and the characteristics of each, as classified by him under the authority of the law of the State—the information contained in the report, has been already given to our readers, either from incidental reports of the Inspector, or other sources.

Another document is a very interesting Report from the Michigan State Agricultural College, containing addresses from the Governor of the State, President of the College, and others, and a general account of the object of the Institution, the manner in which it has been managed since it has been in operation, list of pupils, professors, &c.—making on the whole, a very valuable document.

SYRUP FROM THE CHINESE SUGAR CANE.—We are indebted to Mrs. John Small, of Washington, N. C., for a bottle of Syrup made by her, from the Chinese Sugar Cane, which we consider a *little* the best of any sample we have yet received. Every account we have of this plant, more fully convinces us, that its introduction is destined to be one of the greatest blessings enjoyed by both man and beast of our country. A gentleman, famous for his rich butter, made from his fine Alderneys, remarked to us to day, in effect, that the cane was of inestimable value for his stock.

PEABODY CORN.

Mr. Peabody has sent to our order a couple of bushels of his corn, which, as noticed elsewhere, we are selling at about 50 cts. a pint, which will plant ¼ an acre; and postage 78 cts. a pint, if sent by mail—which must be prepaid. Mr. Peabody, is the Horticultural editor of the Alabama "Soil of the South," and well known as the originator of the strawberry bearing his name, figured in the last Patent Office Report. He gives the following directions for planting the corn:—

The following is the method by which the *twenty-five* acres was planted and cultivated, which took the first premium for the largest yield, at the Alabama State Fair, held in the city of Montgomery, November 17th, 1857:

The land was frequently plowed just before planting time, and then sub-soiled as deeply as two mules could pull the sub-soil plow. When well prepared, furrows were run five feet wide, as deep as two long point scooters, one after the other, could open them. In the bottom of this furrow, every four feet, I dropped a table spoonful of Guano. This I covered with earth, and over it dropped two grains of Corn. When the corn was up, from four to six inches high, I thinned it out to one stalk to a hill, and gave it a deep plowing with a scooter plow.

All the after culture was given with the horse hoe, an implement that stirs the soil, kills the grass, and leaves the surface perfectly level. When the corn is ten inches to two feet high, it will begin to tiller. The tillers should not be taken off.

In rich soil, the tillers will be more numerous than on poor—therefore, the better the land, or the greater the quantity of manure used, the more Corn.

Where this Corn is wanted for seed, it should not be planted near any other kind of corn, as corn will mix 200 yards.

Let it be remembered by the planter, that the richer the soil the greater distance the Corn should have, and in no case should but one stalk be left in a hill, and all the tillers left to grow that may shoot.

On lands that will make thirty bushels of the common Corn to the acre, one hundred of this Corn can easily be made, and on rich Corn lands of the West, it will make two hundred bushels to the acre, averaging over sixty pounds to the bushel shelled. CHARLES A. PEABODY.

Mr. Peabody writes us that the tillers of his corn, "are entirely unlike suckers—they appear to be independent of the main stalk; yet they are connected at the bottom. Each stalk sent you is the product of one seed. Many think this corn the Wyandotte. You will at once see the great difference. My corn is a heavy firm corn, good for herd and stock, and is a fine shipping corn." He has sent us some samples of the corn on the stalk, which can be seen at our office.

MARYLAND STATE AGRICULTURAL SOCIETY.

Mr. McKinstry, Chairman of the Committee on Agriculture, has introduced in the House of Delegates the following bill, entitled an Act in favor of the Maryland State Agricultural Society:

Whereas, the Legislatures of the several States of the Union, have evinced a desire to encourage the development of the agricultural resources of their respective States, by extending aid in various ways to the State Agricultural Society within their boundaries, and have found the most beneficial results arising therefrom; and *whereas*, at the time of the formation of the Maryland State Agricultural Society, and the granting of its charter, application was also made for pecuniary aid to enable it to carry out more fully the philanthropic objects of its projectors, but which, from various causes, was not at that time granted; that the Society has struggled on unaided, except to a limited extent from individual contributions, relying for its support upon its fees of membership and admissions to its shows; that from fortuitous circumstances during the past year it has incurred responsibilities beyond its ability to meet, in its endeavors to extend its usefulness; and *whereas*, the Legislature of the State having at its December session of 1849 evinced its disposition to foster the internal resources of the State, by a liberal endowment to the Mechanics' Institute of Maryland, by which an annual donation is paid in aid of its exhibitions, and as the agricultural interest is deemed equally entitled to and worthy of being placed upon a similar footing with that of the mechanical and manufacturing, as it is upon its success the prosperity of the State and the well being of all other professions must depend, therefore

SECTION 1. *Be it enacted*, That the Treasurer of the State of Maryland be and is hereby directed to pay to the President of the Maryland State Agricultural Society the sum of four thousand and five hundred dollars, to aid in defraying the expenses incurred by the exhibitions of said Society in its efforts for the development of the agricultural resources of the State.

SEC. 2. That the sum of five hundred dollars be annually paid to the President of said Society, for the purposes herein enumerated, within one month after said Society shall have held its annual exhibition, *provided* it shall be shown to the Treasurer that the said Society is in efficient operation at the time of such payment.

The *justice* of this bill to the agriculturists of our State, cannot be controverted—the *policy* of sustaining such institutions, is well attested in other States, as was fully shown in the memorial and accompanying tables presented to the Legislature by the Committee of our State Society—since which we find by the Kentucky papers, that the *annual* appropriation of 5000 dollars for their State Society, has as usual passed the Legislature, and that for $2000 for a similar object has also passed the Legislature of Pennsylvania.

CHINESE SUGAR CANE IN CHINA.—It is a little singular that with all the information which has been elicited upon the subject of the sugar cane, we hear so little about its production and uses in China, where it originated. In a recent work published by A. O. Moore, (late Saxton & Co.) there is some allusions to the subject, but it appears that there is much uncertainty as to its use in that country. A correspondent calls upon us for light upon this point. If any one can aid us in the matter, we hope the call will be responded to by them.

SELLING CORN BY WEIGHT OR MEASURE.

We copy from the "*American*" of this city the following report of the proceedings of the subscribers to the *Corn Exchange*, held on the 18th ult.—The result of the meeting will be, we suppose, that unless otherwise specially agreed upon by the parties selling and buying, the old custom will be continued of selling by the bushel, as nearly all opposed to the weight system, though apparently in a minority, refused to vote on the subject:—

Important meeting of the members of the Corn and Flour Exchange, to take into consideration the necessity of selling Corn by weight.

According to announcement a large assemblage of the subscribers to the Corn Exchange was held at the rooms of the association this morning, to discuss the propriety of adopting the system of selling corn in this market by weight instead of by the measured bushel.

At the appointed hour the President, J. S. Williams, took the chair and announced the object of the meeting, and read a call presented to him by a large number of the members desiring him to convene the association.

W. Crichton, Esq., rose and stated to the meeting the necessity of a change in the present mode of buying and selling corn in this market. Mr. C. entered at length into the arguments advanced for and against any change in the present system, and warmly advocated selling by the *standard weight* of 56 lbs. per bushel. The speaker proceeded to point out the advantages that would accrue to Baltimore as a large and important grain market by adopting the same system which is now pursued in all the important grain markets of this country and of Europe; that shippers of corn experienced great difficulty in adapting the execution of their orders to the present uncertain and unjust method of measuring grain; that it could by no possibility affect the interest of the producers or their agents; that the article would still bring its full value by the augmented price which purchasers would pay for a fixed number of pounds, instead of the present unsatisfactory and uncertain measured bushels; that it would induce increased orders to our market, thereby enlarging the demand, and offering as it were a premium to the farmer to cultivate and send to market corn of superior quality. Mr. Crichton closed by offering the following preamble and resolutions:

Whereas, The present system of selling corn in the Baltimore market, by the measured bushel, is one fraught with much injustice to both buyers and sellers, inasmuch as the *heavy* and *superior* article rarely, if ever, commands its full value compared with the light and more inferior quality, and does not protect or encourage the farmer who cultivates and sends to market an article superior in quality; and

Whereas, The system of selling wheat and corn by weight prevails in all the important markets of this country, as well as in those of Europe, and that purchasers in this market are consequently trammelled and embarrassed in buying corn by the *running* or *measured* bushel, thereby curtailing and limiting the trade of Baltimore in that important article of her commerce; and

Whereas, It is a well known and established fact that in all those markets where corn is sold by *weight*, that higher prices are obtained and more satisfactory results in the mode of measuring are realized to both seller and buyer, and that such a system it is believed would elevate the Maryland product to its proper standard, greatly enlarge the demand in this market, and enhance its value; and

Whereas, The Legislature of this State have now before them "A Bill to regulate the weighing and measuring of wheat in the Baltimore market," thereby intending to correct abuses said to exist in the present mode of measuring grain in the Baltimore market, therefore

Resolved, That it is the opinion of this meeting that the only correct and honest system of selling corn is by a fixed standard of——pounds per bushel, as being alike just and equitable to the producer and consumer, to the buyer and seller.

Resolved, That these proceedings be published in the daily newspapers of this city.

Israel M. Parr, Esq., arose and opposed the passage of the resolution. He contended that any change in the present mode of selling corn would tend to injure the trade in corn, in the Baltimore market, that the change was sought for by only a few of the sellers and buyers, that a departure from existing customs would tend to drive the consignments of corn to other markets.

Mr. Kyle followed in opposition to any change in the mode of measuring corn, and moved the indefinite postponement of the resolutions.

Mr. C. D. Hincks advocated the justice to both buyer and seller of a change in the present unfair system. If the selling of wheat at 60 lbs. per bushel was correct and satisfactory to all parties, he was at a loss to know why the selling of corn by a standard of weight could be objectionable. He inquired if selling by weight should change the destination of corn intended for this market, where would it go, seeing that every important market in the country had adopted this system. Mr. H.'s remarks were extended and elicited much attention.

Mr. Capron followed in some remarks in opposition to any change.

A vote was then taken on the motion to postpone any action, which was decided in the negative. An appeal being taken from the decision of the chair, the decision was sustained, after much confusion and attempts to avoid coming to a vote. The resolution was then voted upon, a large majority of those present voting in the affirmative and one only in the negative; the minority or those opposed to the adoption of the weight system, refusing to vote, whereupon the chair announced the resolutions carried.

P S.—A bill has been reported in the Legislature to carry into effect the object of the above resolutions; against the adoption of which, a petition has been presented by 100 grain dealers of Baltimore.

INSPECTING, MEASURING AND WEIGHING GRAIN.

The following is a synopsis of a bill presented in the Senate of Md., by Hon. Mr. Wallace—It is upon a subject which has created a good deal of feeling between buyers and sellers of grain in our market—Should the bill pass, we will publish it in extenso in our journal, as the State makes no provision for letting those who are expected to obey the laws, know what they are—a system worthy of the dark ages, and ought to be changed at once:

It authorizes the Governor to appoint one in

spector general and four assistants. The first named officer is to keep an office convenient to the wharves, to hear and determine all controversies between the buyer and seller. The assistants are to inspect the grain upon application, taking two fair average samples of each lot, one to be delivered to the owner or his agent, and the other retained in the office of the inspector general until after the sale or delivery of the grain. In case of any controversy between the buyer and seller in relation to the quantity of the grain, &c., the matter is to be left to the decision of the inspector general, and if either party shall then refuse to comply with the terms of sale, the one aggrieved may recover, in a suit at law, double the damages he may prove he has sustained by the said refusal; or should a purchaser refuse or neglect to comply with the terms of sale, after the general inspector's decision, the owner or his agent may either retain the grain and sue for damages, or may re-sell the same and then sue for the difference in price between the first and last sale, also for the delay and detention, and recover, in either case, double the amount of damages that shall be proven to have been sustained.

The inspectors are also to weigh all wheat inspected by them, but are prohibited from weighing or inspecting any grain after it has been sold and delivered, or buying or in any way dealing in it while in office, under a penalty of fine and dismissal. If the purchaser fails or refuses to take or receive the grain, or alleges that the bulk is not equal in quality to the sample by which he purchased, and it shall appear that six hours have passed since the sale took place, and no complaint has been made to the seller or his agent within that time, it shall be presumed (unless clearly proven to the contrary) that the bulk does correspond with the sample, and the said purchaser shall be compelled to pay all damages and charges that may have arisen by reason of his delay or refusal to comply with his contract, to be assessed and determined by the inspector general.

For the inspection and weighing of wheat, one cent per bushel is to be charged upon the entire cargo or lot, and one half cent per bushel for all other grain; one half to be paid by the purchaser and the other by the seller. The money is to be paid into the State Treasury, but one half the amount is to be returned to the inspector and his assistants, provided it does not amount to more than $2,500 per year for the inspector general, and $2,000 for each other inspector. The inspector general is to appoint as many measurers of grain as the demands of trade require, but their compensation is not to exceed one-fourth of a cent per bushel, one half to be paid by the buyer, and the other half by the seller. The act is to go into effect on the 1st of May.

Mr. Miles has since submitted the following amendment to the bill:—

"Be it enacted by the General Assembly of Maryland, That the Governor of this State shall annually appoint, by and with the advice and consent of the Senate, one inspector general and four assistant inspectors of grain in and for the city of Baltimore, who at the time of their first appointment shall not be residents of said city, and who shall hold their office for the period of one year from the date of their appointment and qualification, and until their successors be duly qualified, whose duty it shall be to inspect all grain carried to the city of Baltimore for sale; provided that neither of said inspectors shall remain longer in said office than four successive years; and provided further, that nothing in this bill shall be construed to require the inspection or weighing of any grain that may be carried to the said city for sale by car or wagon, unless desired by the owner or his consignee." Which was read—adopted, ayes 10, noes 4.

Mr. Gardener submitted the following amendment:—"Section 19. And be it enacted, That nothing in this act shall be so construed as to take away the right from any owner or owners of any grain, by written order to his agent or consignee, desiring him to sell without inspection, and deliver the same without complying with the provisions of this act." Which was adopted—ayes 9 noes 4.

The bill was then ordered to a third reading.

THE "FARMER" AND "OLD NORTH STATE."—Amongst the numerous letters received of late flattering to our vanity, none have been more acceptable and grateful to the best feelings of our heart, than the following from a subscriber at Sunsbury, Gates Co., N. C., who on remitting his subscription, remarks:

"The February number of your invaluable Journal is at hand. When I tell you I like it, I mean I would not be without it on any account. It is the very work we so much need in the "Old North State." In periodicals, journals or newspapers, as in every thing else, we all have our favorites, or as my wife terms the American Farmer, "my pet," and I wish to assure you that the "Farmer" is above all others of the same class my choice, and I wish you to know it. You should be encouraged and sustained in the good cause you so eminently and successfully strive to promote. Each number is amply worth the year's subscription, but if you can afford to publish it *so very low*, it is none of our business, and still we do hope you may receive that amount of patronage that will sustain you in your good work.

You will please send me the January number *and every number you publish after now.*

Wishing you unprecedented success, long life, the blessings of a happy home circle, and all the blessings of this life, I am, Sirs,

Yours very truly,

J. B. H.

"P. S.—Enclosed I send you a white hyacinth, gathered to day [Feb. 9th,] from our yard with the spring crocus, violet and *our own* yellow jessamine. Thus you can judge of the mildness of our winter."

The venerable James Gowen, ex-President of the Philadelphia State Agricultural Society, in writing us on business, adds:—

I hope you will succeed in obtaining from your Legislature the gratuity for the State Agricultural Society. Our folks at Harrisburg have generously advanced the $2000 to our Society this year, irrespective of its equivalent by the members of the Society—for which I feel very thankful.

Very truly, yours, JAMES GOWEN.

FEEDING SWINE.

Mr. Thos. Wood, of Chester County, Pa., informs us that he weighed two of his Chester sows, of same litter, something over a year old, one of which weighed 392, and the other 380 lbs. The first he fed on unground boiled corn for 17 days, consuming 2 bushels 21 quarts, and gained 36 lbs.,—the other was fed on unground raw corn, same time, and consumed 3 bushels 13 quarts, and gained only 30 lbs.—their drink was thin slop from the hog tub, the same quantity given to each—this shows the value of cooked food for hogs.

A N. Carolina correspondent of the Petersburg, Va. Farmer, recommends the "shorts" or wheat bran as about the best food for hogs that can be given them—He says:—

"I killed this winter about twenty of the finest hogs I have seen anywhere, and throughout the entire summer and part of the fall fed them on nothing but shorts. They were in good order all the time, but in October or November I put them up and changed the food to shipstuff, and just before I killed gave them a little corn. No one killed fatter hogs anywhere, and the lard made from them was very abundant. Mr. Paschal Thomas, of Greenville, Va., first called my attention to the fact of the rapid growth of pigs on this food, and upon a fair trial I am sure I never saw anything equal it. Whether it enables the sow to afford more nourishment, or being soft and fine may be more readily digested by the pigs than other food, I cannot undertake to say, but certain it is, they keep in better order, grow faster than on any other food I have tried, and they always have the appearance of improved stock. Hon. M. W. Ransom, after becoming satisfied of this, has determined to try it on his farm.

Messrs. R. R. Bridgers, Jno. L. Bridgers and B. B. Barron, three of the most intelligent and enterprising farmers of Edgecombe county, use shorts largely on their farms, and so does Col. N. M. Long, of this county.

"In addition to this, I heard Mr. Wm. H. Walker, of Hicksford, Greenville county, Va., say he had used shorts as a fertilizer, and believed it to be better in a corn hill than Guano. This is something entirely new, and if they go into general use for this purpose, will prove of inestimable value to the farming interest, as Guano is too high to be profitable."

The same correspondent adds:—

"There is a disposition among our farmers to go more extensively into the culture of cotton, and much more will be planted in this region the present year than has ever been heretofore. Wheat, having gotten down to $1 00 a $1.25, is in a great measure abandoned by those who under the influence of the high prices the past three or four years, had commenced producing it, though in the upper counties the farmers still go into it as strong as ever."

BAY TOBACCO.—The Maysville (Ky.) Eagle, has a specimen of this tobacco, raised in Bracken Co., from seed from Maryland; the only effect produced by transplanting from Maryland to Kentucky, is an increase of its size, which Col. Bradford, who raised it, thinks adds greatly to its value. It is proposed to go more largely into its cultivation in Kentucky.

U. S. AGRICULTURAL SOCIETY.

Among other proceedings of this Society at its late annual meeting at Washington city, were the following:—

Dr. Antisell, of D. C., was introduced, and addressed the Society at length on "The necessity of having a more perfect knowledge of the mineral necessities of our own crops developed." He brought under the notice of the Society some observations regarding the proper application of chemistry to agriculture, remarking that the last fifteen or eighteen years had opened to us varying views of the value of chemical science. The old view of the rotation of crops, which believed it to be necessitated by some vegetable poisons poured out by the roots, has been completely overturned by our better knowledge of soils. Then arose the idea of the analyses of soil to indicate whether the necessary elements were present or not, and the analyses of soils became the prime necessity of the day. Dr. A. observed that since 1840 he had been engaged in such analysis, and had made nearly two thousand separate analyses; at the commencement, having implicit faith in the results—a faith which in a few years became sober caution, and has ended in positive distrust. The analysis of a soil gives no real valuable result either of scientific or practical value. The earlier analysis only indicates a soil to contain a few ingredients, while we now know that the important matters are always in minute proportions—so much so as to elude the earlier and coarser analyses. Chemical methods and apparatus are now so much advanced that we can readily detect those matters which formerly eluded notice. Looking back at the imperfect processes practised, we may safely say that almost all analyses previous to 1847 are worthless; but even the best made analyses of a soil affords no useful indications to the farmer. What is required is a more perfect knowledge of the mineral matters of crops. Of the constitution of the saline matters of plants we are much in the dark; even of wheat the per centage varies in different analyses from 1¼ per cent. to 4½, and the mineral matters of straw vary from 3¼ to 16½ per cent. In this variety of conclusion where is the truth? Yet all the results may be right, allowing for variations of climate, soil, manure, and age of the plant; but even this variation should be known; and we ought to be able to formulise our plants as we do minerals. Every species of plant has an appropriate ash and a certan amount of it, which might be made to be included under a general formula appropriate to the species. It is well known that certain saline matters in plants favor the production of gluten, and others favor sugar, starch and such principles. Now, we require to know what are the salts which increase the one and what the other. Plants cultivated for food are not placed in natural circumstances, they are forced; and they require additional and various food to develop the large amount of proximate principles which we draw from them. We can increase the quantity of sugar in the beet by vegetable manure and lime, and we can increase the amount of gluten by soluble phosphates; but we require additional experiments to complete this chain of knowledge, so important to the farmer. These experiments should be undertaken under the sanction of the United States Agricultural Society, and he now placed this subject before their notice that, if it meets their approval, they may recommend that

such experiments be made; suggesting that a portion of the grant made by Congress for the benefit of agriculture might be appropriated for that purpose.

Mr. Calvert, of Maryland, spoke warmly in approval of Dr. Antisell's paper, exposing as it does the worthlessness of much that had cost farmers a great deal of money in the shape of analyses of soil, patent manures, &c. He also spoke of the paramount claims that agriculture, the first interest in the country, has on the Government, and concluded by offering the following resolution, which was passed, viz:

Resolved, That a committee be appointed to memorialize Congress for a specific appropriation to carry out the investigations proposed by Dr. Antisell.

Hon. B. P. Johnson, from the committee to whom was referred the land bill, presented in the House of Representatives by the Hon. J. S. Morrill of Vermont, reported the following preamble and resolutions, which were unanimously passed:

Whereas it has been the established and recognised policy of the General Government to set apart a portion of the public domain to the purposes of education; and believing that nothing will so well promote the material prosperity of the country and enhance the value of our whole public domain as to increace scientific knowledge, stimulate and properly direct the energies and dignify the profession of agriculture, by the establishment of a system of State Agricultural Colleges throughout the U. States, to be adequately endowed, so as to secure the services of the highest order of professors to render them stable, independent, and successful; Therefore,

Resolved, That the Senate and the House of Representatives of the United States be earnestly requested to grant, during the present session of Congress to the several States, Territories, and District of Columbia, an adequate quantity of the public lands to endow and maintain agricultural colleges in each State, Territory, and the District of Columbia; and we recommend for this purpose the main features of the House bill reported on December 31, 1857, to the Committee on Public Lands as wisely designed to carry out the objects the Society has in view.

Resolved, That the organization of such institutions is no longer an experiment, but they are justly regarded by the civilized world and by the best cultivated agricultural countries of Europe, not only as objects of public necessity, but of paramount public utility, deserving the material aid and care of Government.

THE WEATHER.—The Winter up to about the middle of February, was almost unprecedentedly mild, which was a cause of thankfulness to those who cared for the poor. We had prior to the 12th of the month, but the slightest sprinkling of snow, and fears began to be entertained that the supply of ice, now become no longer a luxury, but almost a necessary of life, would be entirely cut off. The weather, however, is said to be a good paymaster—and accordingly after the middle of February, we had some very cold spells, and heavy snows, which gladdened the hearts of the ice gatherers, and enabled our young men and maidens to enjoy the exhilirating pleasures of the sleigh ride.

FLORICULTURE—March, 1858.

Prepared for the American Farmer, by W. D. Brackenridge, Florist and Pomologist, Govanstown, Balt. Co., Md.

Camellias—will now be starting into growth, use the knife freely, by cutting back all straggling shoots and weak cross branches, so as to form symmetrical bushy plants; while they are making their growths, raise the temperature of the house 6 to 8 degrees, syringing three or four times a week overhead, and water with liquid manure at the roots occasionally. Shift into larger pots such as require it, observing to drain the pots well, and place a thin layer of decayed sphagnum moss over the drainage, so as to prevent the earth from stopping the passage of water by the opening at the bottom of the pot; the best compost for Camellias, consists of about one half friable loam, taken in thin sods from the surface of an old pasture, and has been laid up in a heap from 6 to 8 months, break this up fine with a spade, but do not sift it, add one-fourth decayed leaves, or well rotted cow manure, and about the same quantity of sharp sand, mixing the whole well together. Should earth worms have got into the pots, a single watering with clear lime water will rid you of them, and not at all injure the plant.

Azaleas.—Now is the season when most of the kinds will be in their greatest perfection. Azaleas are easily raised from seeds, which they produce freely, and where superior new kinds are desired, great care should be taken in cross impregnating the various kinds, observing to choose as a seed bearer, one of good habit and robust vigorous growth, bearing well formed flowers; the anthers of the flower to be operated upon, should be cut out with a pair of sharp scissors so soon as the flower opens, so that the pollen alone of a distinct kind may be applied to its stigma; for example, apply a white to a pink kind, a purple to a white, &c., &c., just as the fancy of the operator may suggest; and in order to be correct in tracing the results of this crossing process, a small hanging ticket bearing the name of the kind from which the pollen was taken, should be attached to the stem of each flower or plant operated upon, and afterwards transferred to the seed paper, and label, when the seed is sown. For general treatment of this tribe—see last month.

Pelargoniums—if attended to as directed for the last two months, will now be showing their flower buds; continue to tie in the shoots as they grow, and see that the aphis are kept under by fumigations of tobacco.

Heaths and Epacris.—Now is a good season to repot this tribe, so that the pots may be well filled with roots, before the hot weather sets in. Use a compost of one part mellow turfy loam, two parts black earth, taken from the woods where Vacciniums and Calmia bushes flourish, and one part clean, sharp white sand; drain the pots well, and use a little Sphagnum moss over the drainage. By following these directions, you can use water freely, when the plants are in a growing state, both overhead and at the roots, always observing to keep them in a light, airy situation. Cuttings rooted during the winter, may now be placed in thumb pots; omit the loam, and use only the black earth and sand for this purpose.

Roses—attend to these as directed for last month. The young wood of such as have done flowering, will now strike roots freely, if placed on a mild hot-bed.

Cactuses will now require to be more freely watered.

Acacias—so soon as done blooming, should be shifted into larger pots; it is better to do so now, than towards the fall, as they make stronger wood for blooming next season, and require less water during the summer; most of the kinds require large pot room, but some of the more delicate sorts, as A. Drummondii and pubescens, succeed best with only moderate shifts.

Annual Flower Seeds—such as Phlox Drummondii, Petunia, Verbena, Globe Amaranth, Salvia, Brachycoma, &c., may be sown about the middle of the month, for early blooming in the open border.

Salvias, Heliotropes, Double Petunias, Scarlet and Rose Geraniums, with other summer flowering soft wooded showy plants, can yet be propagated by cuttings, for planting out in spring.

Climbing Plants, as Cobea scandens, Maurandias, and Lophospermums, should now be sown on a gentle bottom heat, so as to have strong plants for decorating arbors and trellis work in summer.

Cinerarias, Calceolarias, Schizanthuses and Petunias—not in flower, should, if the roots have filled the pots, be shifted into larger ones immediately.

Dahlias—for propagating from, if not already potted and placed in heat, ought to have this attended to without delay.

Tuberoses—for early blooming in the greenhouse, may now be potted.

Tulip and Hyacinth beds—if the weather prove open and warm, take off towards the end of the month, a portion of the winter covering; but be cautious and not do it too soon, as a sharp frost will injure the plants for blooming.

Cold plant pits and frames—attend to giving a liberal supply of air in fine weather, and see that the covers are taken off early in the morning, and as the season advances, omit putting them on altogether.

GUANO AND CHARCOAL.—*The North British Agriculturist*, of Dec. 30th, 1857, contains a report of certain manures upon green crops, by which it appears that a mixture of equal parts of charcoal manure and Peruvian guano, produced nearly as great an increase of crop as when a double quantity of the guano was used alone. In other words, 3 cwt. of Peruvian guano, and 3 cwt. of charcoal manure produced nearly as large a crop of turnips as 6 cwt. of the same guano used alone.

Remarking upon this result the Country Gentleman adds:—

"As pulverized charcoal or charcoal dust is much cheaper than Peruvian guano, the fact above noticed may suggest to those who employ guano and other expensive manures, especially if ammoniacal, a mode of using them which will be economical, if the results from such a mixture should be found to correspond with that reported. Charcoal manure is quoted, we see in British journals, at about $1 per cwt., while Peruvian guano costs at least $3 per cwt.

"As the real manurial value of this mixture is undoubtedly to be attributed to the influence of the charcoal in fixing the ammonia of the guano, it seems highly probable that a similar admixture of charcoal would be beneficial in the case of any other ammoniacal manure."

A subscriber in Gloucester County, Va., having failed to remit his subscription to the Farmer for nearly six years, has sent us his check on a Richmond bank, for $12. He says:

"I do this to get even with you—I am in arrears six years—I want to compensate by getting in advance six years. This pays my subscription to July, 1864, until which time I hope you and I will live and enjoy life." So may it be.

Another subscriber in Pittsylvania, Va., in remitting his dollar, writes us as follows. We will only remark, that a weekly or semi-monthly publication is in contemplation at no distant day:

"I look forward with much pleasure to its monthly visits, but should be much better pleased to welcome it semi-monthly—why not? or at least with an increase in size, surely your subscribers would not object to an increase in the price of subscription to extend the usefulness of so valuable a journal—for in this age of progress, farmers particularly need all the information and every suggestion they can obtain."

A letter to the editor of the Farmer, from Dinwiddie county, Va., says:—

"Considerable quantity of our last year's corn crop was injured by frost, and being blown down by heavy winds, over 100 barrels, of upwards of 300 barrels I gathered, are tainted or rotten; to make the best of it, I had it parched for the hogs, having discovered that they relish it thus. I except however the rotten corn, which is fit for nothing but to make manure of."

MANURES.

Mr. T. W. Field, in a paper read before the Farmers' Club of the American Institute, on Manures, states the following propositions:

1. Manure does not waste so long as it is unfermented or undissolved, and these conditions may be effected by drying or saturation.
2. Fresh manure is unfit for food for plants.
3. Fermenting manure, in contact with inert matter, has the power of neutralising vicious properties, such as the tannic acid of peat, and making it a fertilizer.
4. Manure wastes in two ways—the escape of gas, and the dissolving of its soluble salts.
5. The creative power of manure, mixed with other substances, is capable of multiplying its value many times.
6. The value of manure to crops is in proportion to its divisibility through the soil. *The golden rule of farming should be—small quantities of manure thoroughly divided and intermingled with the soil.*

MIXED GUANOS.—A correspondent in Carroll Co., Md., says:—"I have ploughed an old poor field for my corn crops—intend liming it, but desire to make some application to the hill as the lime will do but little for the first crops. Some of our farmers have mixed Peruvian and Mexican guano, for this purpose, and been very successful with it."

Believing that the following article will attract the attention and be acceptable to many of our lady friends, we are induced to publish it in the *Farmer*, copied from the *Agriculturist*, for February:—

HOW SEWING IS DONE BY MACHINERY.

We are happy to be able to present our readers with some illustrations which, with the accompanying descriptions, will answer the question—"*How* can a machine make stitches?" We are aware that it is not a little difficult to describe the inside works of a sewing machine, without having the machine itself and the reader directly before us, but we will do the best we can with the aid of some engravings for which we think our friends will give us a little credit, when we tell them that the drawings below are principally of *our own* designing. We preferred doing the work ourselves, to letting the manufacturers do it, for we feared the whole matter would be so familiar to them that they would not appreciate the minute details necessary to make the subject plain to the unskilful reader.

Fig 1

We commence with the stitch made by the Wheeler and Wilson machine, [office, 343 Broadway, New York,] as that appears to be the simplest, and most easily illustrated. Fig. 1 exhibits two pieces of cloth, *c*, placed together and partly sewed. A little examination will show that the upper thread *e*, *e*, *e*, is crossed in the centre of the cloth by the lower thread *z*, *z*, *z*—in other words, the two threads cross each other and are thus locked together. This is essentially the 'lock-stitch' invented, and patented in 1846, by Mr. Howe, (to whom we are indebted for the first practical application of machinery to common sewing; and are glad that, unlike most inventors, he is reaping a rich reward, for though he makes no machines himself, yet the principal manufacturers of the successful sewing machines all pay him a license fee on each machine sold. So those ladies who buy them will have the satisfaction of knowing that some of the purchase money at least goes to the inventor himself.)

Fig. 2

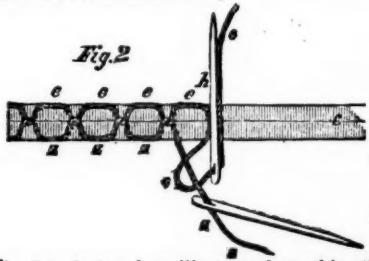


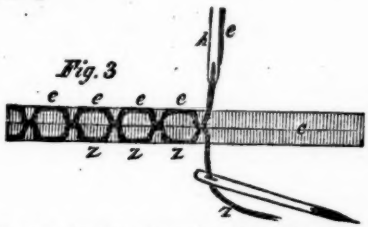
Fig. 2 is designed to illustrate how this stitch might be made by hand.

Here the needle *h*, carrying the upper thread *e*, is thrust down through the cloth (the eye foremost) and partly drawn up again, thus forming a small loop of the upper thread. Through the loop thus made, a needle carrying the lower thread *z*, is passed. (We are apparently sewing with the blunt end of the needle, but in practice we may suppose the *eye of the needle to be near the point*, which is the case in all sewing machine needles.)

If we now withdraw the upper needle it will carry the lower thread into the centre of the fabric, forming a complete lock-stitch, as seen in Fig. 3.

By continuing this process a series of stitches will be made; and since the upper thread enters and returns upward through the single needle hole, there will be upon the surface of the cloth a single line of thread exactly resembling ordinary "back-stitching."

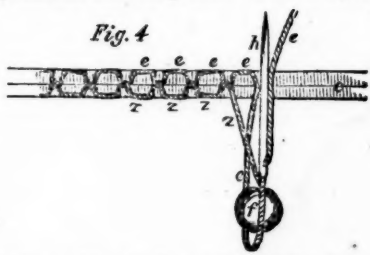
Fig. 3



We see also that the underside of the cloth will present precisely the same appearance as the upper.

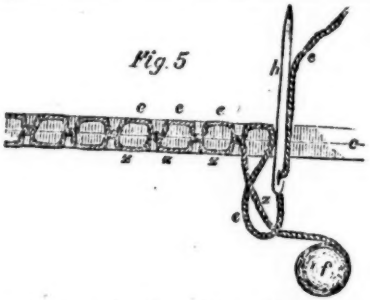
In the machine invented by Mr. Howe, the upper needle was moved by machinery, and the lower thread was carried through the loop by means of a shuttle having within it a bobbin (or spool) of thread. This arrangement is still used in heavy machines for leather and other thick fabrics, and in some of the "family machines." The Wheeler & Wilson machine is an improvement upon the shuttle, in several respects. It makes precisely the same stitch, but with less complicated machinery and less waste of power. We will try to explain its working to the readers of the *American Agriculturist*. Referring to fig. 4, we see the needle and upper thread, *e*, thrust down, just as in fig. 2. But in fig. 4, the lower thread *z*, is wound upon a bobbin, or spool, *f*. To illustrate the working, we may suppose this bobbin passed into the loop between the needle *h*, and the upper thread *e*. In fig. 5, it is shown carried through. Here we see that, on withdrawing the needle *h*, the upper thread will draw the lower one into the cloth, producing a lock-stitch in the centre of the fabric, precisely as in fig. 3.

Fig. 4



By examining fig. 4 and fig. 5, it will be seen that the same effect would have been produced, had the bobbin or spool, *f*, remained stationary, and the loop been carried around it—down the right side and up the left, around the lower thread *z*. This end is, in effect, accomplished in the machine.

In fig. 6 we have a rotary hook, *E*, upon the end



of the shaft *C*. Inside of this hook, in the concavity *Y*, is placed the bobbin *F* (as seen in fig. 8.) The needle *h*, coming down through the cloth, and being partly withdrawn, leaves a loop at *e*. The point of the revolving hook passes into the loop at *a*, opens it, and carries it around, spreading it as it moves forward, so as to throw it around the bobbin or spool within the hollow hook. The bobbin *F* (fig. 6) has no axis passing through it, but is held in the concavity *Y* by a ring (not represented) placed before it, so that it plays freely and allows a loop of thread to pass around on both sides, as around the small ball of thread in figs. 4 and 5.

Fig. 6

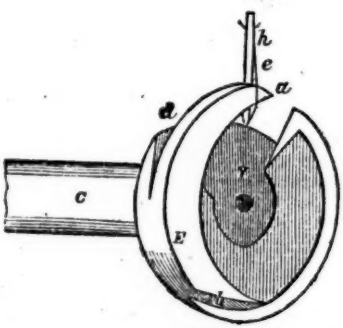
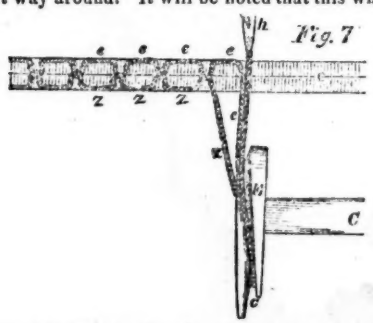
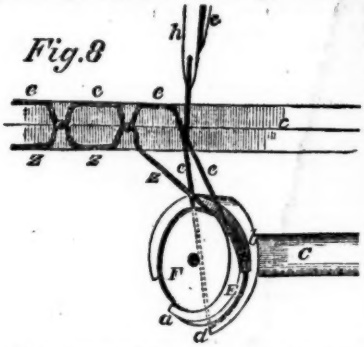


Fig. 7 gives a side view of the thread carried part way around. It will be noted that this wheel upon which the hook *a* (fig. 6) is placed, is bevelled at *E* in fig. 7, so as to throw the thread off from its edge after it has been partly wound around it. The object of this is to throw one part of the loop around the bobbin in order to embrace the lower thread.



The operation can be better understood in fig. 8, by tracing the position of the upper thread *e*, *e*, and of the lower thread *z*, *z*. We observe that the loop having been first formed on the right side of the lower thread *z*, one part of it falls behind the bobbin *F*, (back of the dotted line,) while the other branch of it is caught by the hook, carried around, to be thrown off on the other side of the bobbin, by means of the bevel or half screw at *b*.



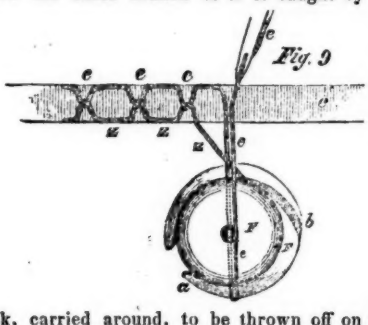


Fig. 9 gives a front view of the same. We here see the upper thread *e*, *e*, bent, or looped, completely around the lower thread *z*. A little further turning of the circular hook will throw the thread off from it, when, by the simultaneous tightening of the thread above, the lower thread embraced by it will be drawn into the cloth and form a lock in the centre.

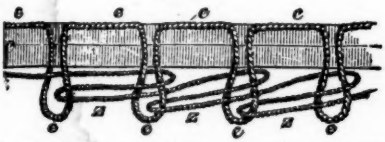
It is surprising to see with what rapidity these successive stitches can be made. A quick motion is communicated to the needle, circular hook, bobbin, &c., by turning a multiplying wheel, with a foot treadle. In ordinary work, eight hundred to a thousand stitches are easily made in one minute, and this, all day long; and there is scarcely a limit to the speed. (Think of that, ye who would see your wives, mothers, and daughters, continue bent over the hand needle, which can scarcely execute fifty stitches a minute, at best!)

We omitted to say that the cloth is moved forward by a simple feed motion, making long or short stitches according to the will of the operator. An examination of the stitches will show that there is less thread used than is required in

ordinary back-stitching, since in back-stitching there is a double thread on part of each surface, while here, there is but one continuous thread.

We intended to further show, not only the kind of stitches, but also the mode of making them in the other varieties of machines, but we have not been able to complete the necessary drawings.—We will, however, describe briefly the appearance of the stitches in one or two of them.

Fig. 10.



In fig. 10, we have given, as nearly as we could, the form of the stitch made by the Grover & Baker machine, where the threads are purposely left loose, so that the course of each one can be traced. (It would be interesting, could we present at this time drawings of the parts of the machine, by which the beautiful windings and interwindings of the threads are brought about.) A glance at the figure shows the course of the upper thread *e*, *e*, *e*, and the lower one *z*, *z*, *z*, the latter being smaller than the former.

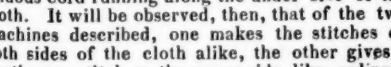
Suppose we begin at the left hand, and bend down the upper thread through the cloth, to make a loop *e*. Next bend a loop of *z* through the upright loop, and carry this last horizontal loop forward, so that the second loop through the cloth can be brought down through it. Then hold the second loop of the upper thread open until the second loop of the lower thread is thrust through it, and carried forward, to be entered by the third loop of the upper thread. Continuing this operation gives the arrangement in fig. 10.

Fig. 11.

Fig. 11 shows these stitches left *loosely*, as they appear when looking upon the *under* surface of the cloth. The loop, or horse-shoe, terminates abruptly upon the left of each. At this point the two ends pierce the cloth, as seen in fig. 10 above.

In the next illustration (fig. 12) we have the appearance of the cloth after being sewed, with the stitches drawn up by the machine in actual work. The cuts of course show the stitches magnified. When they are made short and the threads are properly tightened, we can only see a small continuous cord running along the under side of the cloth. It will be observed, then, that of the two machines described, one makes the stitches on both sides of the cloth alike, the other gives a continuous stitch on the upper side like ordinary

Fig. 12.



back-stitching, with a small cord upon the under side. The Grover & Baker stitch can be unravelled, with a little care in getting hold of the two threads used. We do not see how the Wheeler & Wilson stitch can be unravelled at all. But in practice, it is next to impossible to rip a seam of half an inch sewed by either machine, even if the cloth be cut up into sections of that length.

Fig. 13.

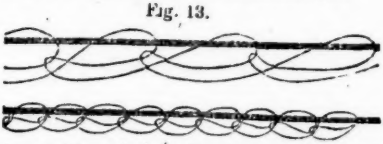


Fig. 13 illustrates the Tambour or chain stitch, made with a single thread. This is the kind used in the cheaper, or rather the lower priced machines. It will at once be seen that the stitch can be readily unravelled by taking hold of the thread at the left. There may be cases where sewing in this manner may be useful, but a glance at the stitch itself will show that it is not adapted to general sewing in a family.

"ENGLISH TRAITS," BY R. W. EMERSON.

"The native cattle are extinct, but the island is full of artificial breeds. The agriculturist, Bakewell, created sheep, and cows, and horses to order, and breeds in which every thing was omitted but what is economical. The cow was sacrificed to her bag, the ox to his sirloin. Stall feeding makes sperm-mills of the cattle, and converts the stable to a chemical factory. The rivers, lakes, and ponds, too much fished, or obstructed by factories, are artificially filled with the eggs of salmon, turbot and herring. Chat-moss and the fens of Lincolnshire and Cambridgeshire are unhealthy and too barren to pay rent. By cylindrical tiles, and gutta-percha tubes, five millions of acres of bad land have been drained, and put on an equality with the best, for rape culture and grass. The climate, too, which was already believed to have become milder and drier by the enormous consumption of coal, is so far reached by this new action that fogs and storms are said to disappear. In due course all England will be drained and rise a second time out of the waters. The latest step was to call in the aid of steam to agriculture.—Steam is almost an Englishman. I do not know but they will send him to Parliament next to make laws. He weaves, forges, saws, pounds, fans, and now he must pump, grind, dig, and plough for the farmer. The markets created by the manufacturing population have erected agriculture into a great thriving and spending industry."

Swinish Refinement.—"An old Norfolk Farmer," in the Farmers' Magazine, in Notes of a visit to the Smithfield Club Fat Cattle Show, says: "I noticed one *improvement* which appeared to me somewhat too refined. Several of the pens were furnished with *pillows* for the pigs to lay their snouts on when they were sleeping. What would the Highland chief of the last century (mentioned by Sir Walter Scott) who kicked a snow-ball from under his son's head, calling him "an effeminate young rascal, not to be able to sleep without a pillow"—What, I repeat, would the old chieftain say to pigs being furnished with such luxuries?"

GREAT PRODUCT OF CORN.

The following statement, from Dr. Parker, to the S. Carolina State Agricultural Society, shows, we believe, the greatest yield of corn on record—being upwards of 200 bushels from one acre, and 116 bushels from an adjoining acre. We also annex another report from the same gentleman of the product of another acre of land, by which it appears that 89 bushels oats, and 82 bushels and upwards of corn, were raised in one year from the same ground. This tells well for the Palmetto State. Her lands must be extraordinarily productive, or her farmers and planters uncommonly skilfull in their profession. The correctness of the statements it will be seen are duly vouched for.—We copy from the S. C. Farmer and Planter:—

REPORT ON CORN.

To the Executive Committee State Agricultural Society:

GENTLEMEN—As a competitor for the premium to be awarded for the largest yield of corn from two acres of ground, I herewith present the certificate of the Committee, and the letter of Mr. Veal, who measured the land; also, the following report on the preparation of the ground and culture of the crop:

The ground selected for my experiment, was sand hill branch land; after drying it by underground drains, it was broken up with a common tongue plow in November—about 25 two-horse loads of manure from my cow-house, were spread over each acre in December, and well plowed in with a two-horse iron plow (Glaze), followed with the subsoil plow, drawn by two mules.—About the first of March, another coat of good stable and cow manure was spread and plowed in as the first. Early in April, three cart loads of air-slacked lime, and two sacks of salt, were spread over each acre, and lightly plowed under. On the 14th of May, the ground was thoroughly plowed with Glaze's large iron plow, harrowed level and laid off thirty inches apart with a shovel plow.

Guano and Plaster was sprinkled in the furrows, near 200 lbs. of the former, and 300 lbs. of the latter, to each acre.

The seed selected for planting, was from North Carolina, and designated "Bale Mountain Corn."

After soaking it during the night in a strong solution of nitre, it was planted from 8 to 12 inches distance in the row, covered it with hoes, and rolled the ground, leaving it perfectly level. On the 14th, it was plowed with a long, very narrow plow, and dressed over with hoes. On the 5th and 17th of June, the same work was repeated, each time leaving the ground level. About the first of July, it was necessary to draw a ridge about the roots of the corn to prevent its falling.

During a protracted drought, Acre No. 1 was twice irrigated, and Acre No. 2 had the water turned on it once.

As you will learn from the certificate of the Committee, the yield from Acre No. 1 was 200 bushels and 12 quarts; from Acre No. 2, 116 bushels and 6 quarts, making from two acres, three hundred and sixteen bushels and 18 quarts.

All of which is respectfully submitted.

J. W. PARKER.

Columbia, Nov. 9th, 1857.

The undersigned, acting as a Committee, certify that they have, with care, superintended the harvesting and measurement of the product of two acres of ground belonging to, and cultivated by Dr. J. W. Parker, which ground we would denominate sand hill branch land; and find the yield of corn to be on acre No. 1, two hundred bushels and twelve quarts; and on acre No. 2, one hundred and sixteen bushels and six quarts—making from two acres, (according to Mr. Veal's survey), *three hundred and sixteen bushels and eighteen quarts* of good sound corn, the manner and measurement of which we regard as accurate, and such as would be entirely satisfactory to us, if we were buying.

It is known to a part of the Committee that acre No. 2, or a large portion of it, was plowed up at a late period, and planted over, which, very probably, was an injury to the crop, and lessened the yield.

JOHN DENT, JR.
WM. WALLACE,
W. L. GOODWIN,
JOHN GLASS.

"Dairy Farm," Columbia, Oct. 21, 1857.

DR. J. W. PARKER—*Dear Sir:*—I measured on yesterday the corn lot as shown me in the field on west side of the main road, and find it to contain *one acre*, and have measured off and staked *one acre* of corn in the field east side of the road.

Yours, THOS. C. VEAL, Architect.

Columbia, S. C., October 21st, 1857.

REPORT ON CORN AND OATS.

To the Executive Committee State Agricultural Society:

GENTLEMEN—As a competitor for the largest yield from one acre of ground, I herewith present the certificate of the Committee, and Mr. Veal's certificate of the quantity of land. Also a report on the culture of the crop, quantity of seed, manure used, &c.

The lot of ground was the same which last year produced 116 bushels of corn—a sand hill flat.—About the last of January the ground was well ploughed with Glaze's large iron plow, drawn by two strong mules—150 pounds guano, and about the same quantity of plaster was spread, and two bushels of oats sowed, harrowed in and rolled.—About the first of March the roller was again used. On the 30th of June, the oat crop was harvested.

The lot was immediately plowed, as at first, and harrowed (all stubble was removed to the cow yard) it was then laid off three feet apart, and planted at a distance of 12 to 14 inches in the rows covered with hoes, and rolled. On or about the 20th July, manure from the cow-house and lot was spread, plowed under, and the ground dressed with the hoe. After this working, a succession of heavy rains induced a rapid growth; the weather becoming very hot and dry, irrigation was resorted to on the 15th August, and continued until the 25th with great success. The plow was twice used after planting the corn; the hoes were also used twice.

Respectfully submitted by

J. W. PARKER.

I beg leave to refer to the certificate of Messrs. Adams, Hort and Glass, herewith submitted as a competitor for the largest yield of oats on one acre. J. W. PARKER.

Dairy Farm, Nov. 9th, 1857.

At the request of Dr. J. W. Parker, I measured a piece of ground on his farm, which produced

a crop of oats and a crop of corn, during the present year.

The part in oats measured one and three-eighths (1⅜) of an acre, three-eighths of which, however, was not included in the measurement of the Committee. As I was creditably informed by Mr. Glass and Mr. Due, *that* part of the oat crop was cut and fed to the stock green, and the piece put in turnips.

That part of this lot planted in corn, measured just *one acre.*

THOMAS C. VEAL, Civil Engineer.

Columbia, S. C., Nov. 7th, 1857.

The undersigned, acting as a Committee, certify that they have, with care, superintended the measurement of a crop of corn and oats on Dr. J. W. Parker's farm this year, from one acre of ground, according to the measurement of Mr. Veal, a certificate of which is herewith submitted.

The crop was measured by us, and is to wit: 89 bushels of oats, and 82 bushels one quart and one pint of corn. The land in oats, it is known to one of the Committee, included a small piece now in turnips. One of the Committee is aware that the product of that piece was *not* included in the parcel measured, as that portion of the crop was early cut and fed to the stock. It is also known to one of the Committee, that the crop measured was the product of the same acre, the harvesting, cleaning and measurement, all having been done under his particular notice.

M. ADAMS,
JOHN GLASS,
E. B. HORT.

Columbia, S. C., Nov. 9th, 1857.

BLOODY MURRAIN.

I have lately seen it stated in the papers that this fatal disease had appeared among western cattle, and another writer pronounces the disease incurable. In the absence of proper books setting forth the western diseases of cattle, I have thought it a public service to say something to the readers of the *Farmer* on this subject.

BLOODY MURRAIN—CAUSES.—Many persons think this disease infectious; no doubt the bloody discharges in a herd of cattle intensify the predisposing causes, but nothing more; and for that reason the diseased animal should at once be removed from its fellows. I believe the disease to be caused by malaria. It generally appears in excessively *wet* pastures, and where the cattle have been fed a long time in a short space of surface, fouling the soil.

SYMPTOMS.—Yellowish water infused in the ordinary white coats of the eyeballs, and exhibited in the urine, drooping, and great inactivity, loss of appetite, and especially will the diseased animal stand apart, and become *solitary* for some days before the disease fatally exhibits itself; then follow bloody discharges from the bowels, and sometimes the urinary vessels, as death approaches.

PREVENTIVES.—Keep always in tight troughs, salt sprinkled on ashes, accessible to the cattle. This is almost a *sure preventive;* occasionally, however, as cattle get very fat, remove them to new standing places.

CURE.—As soon as an animal shows any of the above symptoms, remove him at once from the herd; mix common slacked lime as if for whitewash, and give a full grown bullock from three to four pints of it at once; if this does not cure, the case is hopeless, so far as my experience goes. The lime acts not only as a powerful purgative; but in some other unknown way, as other purgatives fail to have any efficient result. I need hardly say that the sooner the drench is given after the disease shows itself, the better—as after the bloody discharge from the bowels begins, it is rarely curable.—*Ohio Farmer.* C. M. CLAY.

CARROTS, 2000 BUSHELS PER ACRE.—In 1852, I purchased a farm near my residence in this town; on one-fourth of an acre had been raised carrots, for several years before I made the purchase. I have continued to raise them on the same piece every year since. The land is rich, but rather stony, having a thick surface of loam resting on clay and gravel subsoil. I have plowed the land the last two years, three times each year, with a Michigan plow. I gave four hand weedings, and sowed the rows only twelve inches apart. The first three years, I raised about 175 bushels each year. The fourth, I plowed with a Michigan plow, deep, and raised two hundred bushels. Last spring, I plowed with the same plow, giving a furrow thirteen inches, and I raised by actual measurement, 342 bushels, or at the rate of 1368 bushels to the acre. The carrots were the largest ever raised in this section, and were many of them over two feet long, and proportionally large.—This fall I have enlarged the piece to 100 rods, and sunk all the rocks eighteen inches below the surface, at an expense of $40,—and if I am as successful next year as I have been this, I shall be disappointed if I do not raise at the rate of 2000 bushels per acre. I am satisfied by my own experience, that carrots can be raised in large crops by planting the same piece every year.

In the words of Mr. Lee, "Why have they not been more generally and more extensively cultivated in a State where feed for milch cows and horses is so extremely high?"—*N. E. Farmer.*

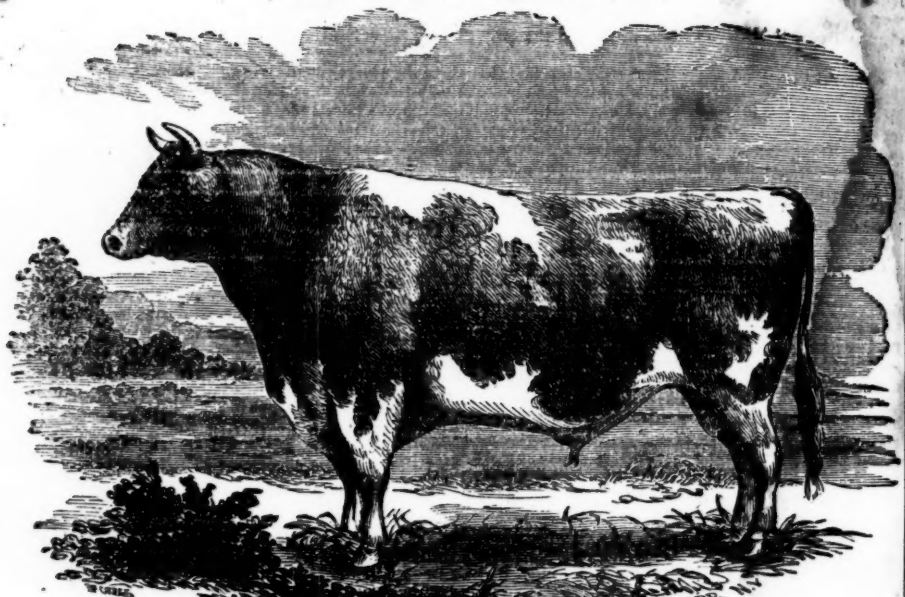
CURE FOR THE GARGET.

An old farmer of Martinsburg, Va., thinks the following cure for the garget, better than that published in our last, having seen the effect in a dairy country for more than 50 years. He says:

"The northern people take what we here call poke root, but is called by them "garget," and dry it, or rather dig it in the spring, and dry it—when a cow has the disease, which the milk will show, they take a piece of the dry garget root, about 1¼ inch long, as large round as a bed cord, tie a strong twine string around the middle of the garget, then slit the dewlap and put the garget down the length of the finger below the slit, and let it remain until the beast is swollen at breast considerably, which it takes from twenty-four to forty-eight hours to accomplish, and the beast will walk much like a beast badly foundered—then draw out the garget and put into the incision a piece of fat bacon, and the job is done. It is considered best to dig the garget before it sprouts in spring, and lay it by to dry. Should you think this worth putting in the American Farmer, it may benefit the farmers who live where Mr. Greenleaf's medicine is not to be had conveniently."

NORTH CAROLINA PLANTER.—A new agricultural journal, with this title, has just made its appearance, at Raleigh, N. C., published by A. M. Gorman, Esq., at $1 per annum. The farmers and planters of the Old North State should sustain it well.

JERSEY BULL COMMODORE.



alved on the Island of Jersey, 1853—2d Premium Bull, under two years, 1854—Imported 1854—First Premium Imported Alderney Bull, under three years, Maryland State Show, 1854—First Premium Imported Alderney Bull, over three years, Md. State Show, 1855—First Premium Imported Alderney Bull, over three years, Md. State Show, 1853—First Premium Imported Alderney Bull, over three years, Md. State Show, 1857—First Premium Jersey Bull U. S. Ag. Soc. Show, Philadelphia, 1856—In the Premium Jersey Herd, U. S. Ag. Soc. Show, Philadelphia, 1856—The property of J. Howard McHenry, Pikesville, Baltimore County, Md.

JERSEY BULL REWARD.

Calved Nov. 25th, 1855—Sire imported Commodore—Dam imported Faith—Bred by and the property of J. Howard McHenry, Pikesville, Baltimore County, Md.

THE LEGISLATURE.—*Bills particularly relating to Agriculture.*—We have elsewhere noticed sundry measures before the Legislature, which have a direct connexion with agriculture. In additon to which, there are several others, the particular features of which we have no information.

Among other bills reported, is one for an amendment to the charter of the Agricultural College, which has passed the Senate, defining the powers of the corporation, in regard to filling vacancies in the body of Trustees, &c. Also a bill to prevent the sale of liquor within two miles of the college.

Bills have been reported for the inspection of guano, agricultural salts and all artificial manures, and the appointment of inspectors thereof by the Governor. Also to regulate the inspection of lime. Also, to regulate the inspection of flour.—Also, to appoint inspectors for manure sold by the cart load. Also, to regulate the inspection of guano, and to build warehouses for the guano trade of the State. Also, to provide a fund for building warehouses in Baltimore City for the grain trade of the State. We have not the particulars of these bills, but we fear there is too much of a disposition to multiply offices, the effect of which is to increase the taxes of the farmer, for the payment of their fees, which the sellers will in all cases take care to add to the bill of sales. As a general rule, we hold it as a truth, that after all the precautions which can be adopted, by inspections, &c., which in many cases have been found to be mere sinecures, the farmer and planter must depend more upon the character of the parties with whom they deal; a dishonest dealer, if so minded, can put at naught the most stringently drawn law. We hope the Committees who have charge of Agricultural interests, in both houses, will look well to these matters.

A bill was early introduced to abolish the office of State Chemist, we learn by unanimous consent of the Joint Committee, although some of the members, it is said, were rather disposed to await the action of the Governor in making his nomination for the office, before the bill was reported. The Governor having nominated *Philip T. Tyson*, Esq., of this city, a gentleman of well known scientific attainments, and distinguished in this city and state particularly as a geologist, that gentleman has presented his views to the Committee in regard to the conduct of the office, uniting a geological survey with an agricultural, and it is supposed that the bill now before the legislature will either be withdrawn or rejected. The Legislature, we hope, will give the new incumbent an opportunity to test the value of the office under his auspices, and if, by the next session, it is found that the interests of the State are not benefitted by its continuance, it should be promptly abolished. Maryland is rich in mineral resources, still undeveloped, and which, if properly undertaken, may add millions to the wealth of the State. From the testimony of many of the most scientific gentlemen of the State, and from our personal acquaintance with Mr. Tyson, we feel much confidence in expressing the belief that he is fully competent for the important duties which he has marked out for himself, if the office is continued.

From the Papers of the Piedmont Fauquier Agricultural Club.

MR. NATHAN LOUGHBOROUGH'S RESULT FROM GRAINING AND GRAZING CATTLE.

To the Editors of the Southern Planter.

OAK HILL, Dec. 16th, 1857.

DEAR SIR:—As Secretary of the "Piedmont Fauquier Agricultural Club," I have been directed to lay before you, for publication, the subjoined report of a lot of cattle grazed by *Mr. Nathan Loughborough*, who resides in the upper end of this county, and to desire you to request the "*American Farmer*" also to give it a place in its columns.

Mr. Loughborough bought, October 1856, forty head of cattle averaging in weight 1073 pounds for $34 88 per head. The said cattle were wintered upon straw and fodder, and a couple of barrels of *inferior* corn *each*. They were turned out upon a sod-field April 22d, 1857, grass having sprung very little. At this date they were again weighed, and were found to have lost an average of fifteen pounds to the steer.

Sixteen of the *smaller* cattle were sent to market in the month of *June*, and notwithstanding they struck a *heavy* market, netted at home $60 per head, a profit of twenty-five dollars and twelve cents each. Had Mr. L. accepted an offer made him at home, for said lot of 16 cattle, he would have realized considerably *more*. In the month of *July*, *ten* more were sent off, which netted at home $65 37½, being a profit of thirty-three dollars and forty-nine and a half cents (33 49½) per head.

Mr. Loughborough has on hand, at this time, fourteen (14) beeves, for which he has a standing offer of 80 (eighty dollars) per head. It is to *this* portion of his lot we wish to direct the particular attention of *farmers* and *graziers*.

Weight of Stock Cattle Oct. 1856.		Weight Sept. 1st. 1857.	Nov. 1st.	
	Pounds.	Pounds.		gain.
No. 1.	*1240	1575	1656	416
No. 2.	1210	1620	1762	552
No. 3.	1170	1533	1687	517
No. 4.	1150	1524	1637	487
No. 5.	1130	1515	1604	474
No. 6.	1110	1510	1632	522
No. 7.	unknown	1508	1630	
No. 8	1120	1505	1625	505
No. 9.	1100	1500	1594	494
No. 10.	unknown	1449	1581	
No. 11.	1140	1431	1490	350
No. 12.	unknown	1422	1550	
No. 13.	"	1413	1531	
No. 14.	"	1400	1516	

* No. 1. when *purchased* was *four* years old, and his *condition* was among the best in the lot, fully equal to the average of the *grass beef* of *this* country. The rest of the cattle were *three* years old with the exception of No. 11. This steer was at least *five* years old, his *condition* was *below* the average of the lot, and although at least one hundred pounds *heavier* than the three last enumerated cattle when *bought*, is now the lightest bullock in the lot, and the difference will be *greater* the *longer* they are kept.—The cattle numbered 7, 10, 12, 13, and 14 were not weighed separately at the time they were purchased, and therefore their respective increase of weight up to this time can

not be ascertained *precisely*, but as the increase of *these* from the 1st of *September* to the 1st of *November* is *more* than *equal* to the increase of the *others*, it is fair to presume that they have gained at *least equally* with them during the *whole* time.

Now the average increase of the other cattle, [throwing out No. 11, which has always been an unthrifty animal] has been "496 pounds" to the steer. The whole lot of cattle (40) lost 15 pounds each during the winter, and if these 13 lost in proportion to the whole number, then they have increased 511 pounds each on *grass alone*, which, to many, may seem *marvellous*.

The aforesaid lot of 40 cattle were grazed *exclusively* on 110 acres of *sod;* 27 acres of which is 21 years old; 50 acres 9 years old, and 23 acres 13 old. Had Mr. Loughborough on the 1st of November ultimo, taken the price offered him, viz: $80 per head, he would have realized a profit of $34.21 per caput. Deducting $4 each for the corn fed in winter, and estimating the long-food at $3 21 per steer, offsetting the *labour* of *feeding* by the *manure* of the cattle, we have a nett profit of $27 per head, which being divided by 2½ acres (the quantity of land grazed by each steer) would give $10.80 per acre, or 16⅔ per cent at $65 per acre.

It is fair to observe, that, though the lot of 13 aforesaid gained an average of 541 pounds upon *grass alone* from April 22d to November 1st, yet the corn fed to them in the *winter*, doubtless left them (though minus 15 pounds below October weights) in a *fine* condition as to general health, &c., to take on flesh from *grass*.

We would be glad to know if any *grazing county* in *Virginia* can beat this.

THOS. MARSHALL, Sec'ry P. F. C.

NEW ADVERTISEMENTS.

The rush of advertisers for the present month, has rendered it necessary for us to still farther enlarge our borders for their accommodation. Altho' this takes from us much of our profits, still we find it cramps us too much to fill the body of our journal with advertisements, important as they are to every one engaged in the cultivation of the soil, to the exclusion of reading matter which must be given to our readers.

Thomas A. Robertson, of Friendship, Md., offers a new Tobacco Weeder, which is worthy the notice of tobacco growers; it can also be had at Cottingham & Harding's in Baltimore.

L. D. Chase, Baltimore, offers Gibbs' Sewing Machine, which by his account, is easily managed and very cheap.

R. H. Dulany, of Loudon county, Va., offers his horse Scrivington, for the season; this noble animal was at our last State Show, and the admiration of every visitor. Read his pedigree, and refer also to the report of the Judges on horses, in our November number.

J. M. Emerson & Co., New York, present to the public the United States Journal, with premiums to subscribers, which, if his promises are fulfilled, will enable his subscribers to get rich by the multiplication of their subscriptions. Unless he has found the Philosopher's Stone, so long sought by alchemists, how he can fulfil his pledges, we are at a loss to imagine; however, that is *his* business, and more especially the business of those wishing to try him. The paper appears to be of years' standing.

Thorp, Smith & Hanchett, Syracuse, N. Y., offer a great variety of Fruit and Ornamental Trees and Shrubbery: send for their catalogue.

L. Tucker & Son, Albany, publishers of the Country Gentleman, offer a most valuable work on Rural Affairs, embracing every matter of interest to the agriculturist; read the description of the book, and you will no doubt want to get a copy.—We have ordered some copies of it. and their Annual Register, also, for sale at out office.

George F. Curwen, West Haverford, Pa., offers Devon stock for sale, of approved pedigrees.

Wheeler & Wilson, New York, offer their Sewing Machine—they give numerous testimonials of its great value. In connexion with their own and other advertisements on this subject, we particularly refer the ladies, and others interested in sewing, to the description of the Sewing Machines, to be found in this month's Farmer.

W. Merrell, Baltimore, adjoining our office, offers, as agent, the Wheeler & Wilson Sewing Machine.

A. Harshbarger, McVeytown, Pa., renews his offer to plant out Osage Orange plants, also for sale the seed and plants.

Jno. Bullock & Son, Baltimore, offer their Ground Bones—an article which cannot be too much used by the farmer.

R. Sinclair, Jr. & Co., Garden and Field Seeds, of every variety, domestic and imported—also their usual stock of Implements and Machinery, for every department of a farm or plantation.

W. D. Brackenridge, Govanstown, near this city, offers every variety of Fruit and Ornamental Trees, Shrubbery and Flowers, at his Rosebank Nursery. Mr. B. has charge of the Floral department of the "*Farmer*"— was formerly in charge of the National Conservatory of Washington, and the Botanist of one of the National Exploring expeditions.

Allen & Needles, Philadelphia, offer their Super-Phosphate of Lime, which we find highly commended in Delaware, Pennsylvania, and other States, and is an old established manufacture. They also offer the Pacific Ocean Guano.

Thos. Wood, Penningtonville, supplies to order his premium Chester Pigs—much admired at our Shows.

S. Welford Corbin, Fredericksburg, Va., has a fine four year old Colt for sale, of which he speaks highly.

John Kettlewell, Balt., offers his Manipulated Guano, with a number of testimonials in its favor from those who have used it. It is a mixture of the Peruvian and Phosphatic Guanos, and reduced to a very fine state.

Reese & Co., also offer their Manipulated, or Phospho-Peruvian Guano, a union of the two kinds of guano. This plan of using guanos, we have no doubt, is of great importance to the farmer.

M. Garrett, Washington City, D. C., has a thorough bred Mare, which we should suppose is very cheap at the price.

J. J. & F. Turner, Baltimore, continue their appeal in behalf of "De Burg," and the authorities they present, approving its use, are of the highest respectability. They also offer Mexican and Ground Mexican, of different qualities.

H. A. Mish, Harrisburg, Pa., has a great variety of Strawberry and other Plants and Seeds.

E. J. Dickey, of Hopewell Cotton Works, Pa., presents a Corn Drill, and his Patent Butter Worker, which we think should command the attention of the public.

Emery-Brothers, Albany, New York, offer their Horse Powers, Thresher and Cleaner combined, Clover Mill, and a variety of other useful Machines.

E. Whitman & Co., the Reynolds Plow, highly commended by a correspondent in this paper, some months ago—also a great variety of Machinery, Garden and Field Seeds of every description.

N. E. Berry, Baltimore, is the agent for the New Jersey Super-Phosphate of Lime Co.—their advertisement contains much interesting matter as to the value of Phosphates, &c. Mr. B. also offers the California Guano.

The Philadelphia Guano Co., offer their Mexican and Colombian Guanos—let those intending to use guano this season, read the authorities quoted, as to the value of these phosphatic varieties.

At the Farmer Office, is offered a variety of Live Stock, Cattle, Hogs and Sheep. We also purchase for the farmers and planters, all kinds of Guanos, Manures, &c., sold in this city or vicinity, and furnish them at lowest market rates.

Thos. Coulson, Albany, N. Y., offers to supply farmers in Maryland and Virginia with Bone Dust this spring.

George Page & Co., Baltimore, are prepared to furnish their Steam Portable Saw Mill, with Portable Steam Engines; this is a matter worthy the attention of every one having large tracts of woodland. They also offer their Grist Mill, and Stump Pulling Machine.

A tobacco farm on Severn River, A. A. Co., Md., is offered for sale; application to be made at this office.

Situation is wanted as a farmer and gardener, by a man who has had much experience.

Joshua Horner, Baltimore, also has Bone Dust and his Animal Manure, which he will sell by weight instead of bushel.

Samuel Ault & Son, Baltimore, offer English Garden Seeds, of every variety—also English Flower Seeds, &c., &c.

P. Malcom & Co., Baltimore, offer Guano of the several qualities and kinds, at the reduced rates.

Wm. Robinson, Baltimore, also offers Guano of all kinds, at the lowest market rates.

Seed Corn, from Pennsylvania, can be furnished, at this office—see advertisement.

Never buy fruit trees in the "market places," of unknown venders, who have no character to lose. You cannot tell by "examining the article," whether they cheat you or not; and you get your tree at half price, only to wish, when it comes to bear, that you had gone to an honest dealer and paid ten times as much for something worth planting. "Hog Peach" trees are dearer at a penny, than 'George the Fourths' at a dollar.

If you don't love flowers yourself don't quarrel with those who do. It is a defect in your nature which you ought to be sorry for, rather than abuse those who are more gifted. Of what possible "use" is the *rainbow*, we should like to know? And yet a wiser than you did not think the earth complete without it.

BALTIMORE MARKETS—Feb. 26.

[The Grain and Flour Market shows but little change since our last—the last advices from England report the market dull for grain, but Cotton was advancing in price. The unsettled state of things produced by the late revulsion in trade, and the entire absence of all speculative demand in the present state of the world, makes business in every branch of trade exceedingly dull, but what is done, is believed to be of a very healthy character. As soon as the Spring fully opens, we have strong hopes of a full resuscitation of trade. The Banks of New York, Philadelphia and Washington, have resumed specie payments—a great drawback to business in this city, is the non-resumption in Virginia and North Carolina, with whom we have a large trade—the paper of whose banks are at a heavy discount—We hope they will soon follow the example of our own.]

Flour, is in good demand, and firm at $4.50 for City Mills; Ohio extra $5, Howard street $5.25, and City Mills 5.12a5.25. Rye Flour dull, 3.12a 3 25. Brandywine Corn Meal $3.25, Balt. $3.20. Wheat, red, 102a105c. and 110a117c. for white; strictly prime $1.20, but little of the latter coming to market. Oats, Md. 34c. Pa. 36. Rye, Pa. 71a 72. Cattle, beef, $3.50a5.25 on the hoof, equal to $7.50a9.50 per 100 lbs. net—some extra lots sold for $6 on the hoof, the gross average last market day was $4.37. Sheep, sales at $4.50a5 per 100 lbs. gross. Hogs, supply light, sales at $7.50a7.75 per 100 lbs. net. The Provision market has an upward tendency; bulk meats 7c for shoulders and 8¾ for sides; Bacon sides 9¼a9½; Balt. packed Mess Pork, $16 75, Western Mess, $17; prime Pork $13; Balt. Mess Beef, $18, and $15 for No. 1. Rice 3¾ for fair, and 3¾a3¾ for good to prime. Clover Seed, in fair demand, at $5.12 to $5.50 as in quality. Timothy Seed 2.25a2.75, and Flaxseed $1.10 a1.12. Sugars are firm, English Island $6, N. O. 5.50a6.25, for ord. to fair; $6.50a7 for good to prime, and $7.25 for choice. Whiskey dull, City 23c., Pa. 22c., Ohio 23. Guano, Peruvian, $52 per per ton of 2000 lbs., over 10 tons and upwards $58 per ton of 2240 lbs. drayage included. Mexican A A $22a25 per long ton, according to quality and quantity. California $45 per ton of 2240 lbs.—importers price by cargo $42.50. Colombian guano, white $37; brown do. Nevassa, $30 delivered.—African, $41 per long ton, delivered. Cotton, middling to middling fair uplands 12c. cash, 13¼, 4 to 5 months credit. Hay dull, $12a14 for baled, 10a 12 for loose: straw $12a14 for Rye, and 8a10 for Wheat. Spirits Turpentine 47c., com. Rosin $1.40 per bbl. Tar and Pitch 1.75a2 per bbl. Potatoes 90 to 125 cts. Tobacco is without much animation, owing to the state of affairs in Germany, where the effects of the late monetary pressure were probably more fatal to credit than in any other country. Md. crop, small sales at $4.50a$8; Ohio $6a7.50 for com. to good reds, and $8a10 for good to fine and spangled; new crop Ky. $10a11 for med. to good. Wool, is quiet, 18a20c. for unwashed, 25a30c. for tub washed; 19a24 for No. 1 pulled, 23a27 for pulled merino, 23a27c. for com. fleece, 28a32 for ¼ to ½ blood do., 32 to 40 for ¼ to full blood do., and41a43 for ex. wool.

AGRICULTURAL BOOKS.—A large assortment of Books on Agriculture and kindred subjects, constantly on sale at this office.

GROUND
A. A. MEXICAN GUANO.

We are just having ground, a cargo of A A Mexican Guano EXPRESSLY FOR MANIPULATING OR MIXING WITH PERUVIAN, as many Farmers prefer to manipulate their own Guano,

And Save 10 to $12 per Ton

thereby, and know at the same time exactly what they are applying to their lands. If this guano is mixed in equal proportions with No. 1 Peruvian Guano, a ton of the mixture will cost the farmer $37 per ton. If mixed in the proportion of ⅓ Peruvian and ⅔ of this Guano, which is highly approved of, a ton of the mixture will cost the Farmer $33 per ton.

J. J. & F. TURNER,
42 Pratt street, Baltimore.
mh1

MEXICAN GUANO.
A A and A MEXICAN GUANO,
WHITE and BROWN,
FOR SALE BY CARGO OR SINGLE TON,
At Lowest Rates.
J. J. & F. TURNER,
42 *Pratt street, Baltimore.*
mh1

GUANO! GUANO!!
The subscriber has on hand a full supply of the best
PERUVIAN GUANO,
Direct importation, which he offers to farmers and planters, at the LOWEST MARKET RATES. Also,
"A A" MEXICAN GUANO,
COLOMBIAN GUANO,
BONE DUST,
SUPERPHOSPHATE, &c.
WM. ROBINSON,
Nos. 4 & 6 Hollingsworth street,
mh1-2t Near Pratt-st. Wharf, Balt.

BONE DUST
BY WEIGHT.
THE Subscriber will furnish *FINE GROUND* or *CRUSHED BONES*, guaranteed in all cases free from any mixture, or a forfeit of the entire quantity purchased—at 1¼ cent per pound, which he has come to the conclusion is a more fair manner to buy and sell, than the ordinary way by the bushel, as some will weigh 44 pounds and others 60 pounds to the bushel, according to the quality of the bones, and the manner in which they are prepared.
N. B.—None of my manufacture is sold in the city, except at my warehouse.

ANIMAL MANURE.
I ALSO prepare a compound which I term ANIMAL MANURE, being bones dissolved by vitriol, and flesh of animals combined, and other ingredients to preserve the ammonia, which by experience has proved fully equal, if not superior, to any of the compound manures in the market. Price $20 per ton.

JOSHUA HORNER,
Warehouse, Cor. Chew & Stirling-sts.,
mh1-6t* Old Town, Baltimore.

S. SANDS MILLS,
STEAM PRINTING ESTABLISHMENT,
OFFICE OF THE "AMERICAN FARMER."

PERUVIAN GUANO.
REDUCED PRICES.
THE REDUCTION in price of PERUVIAN GUANO by the agents of the government, enables us to announce to our friends and customers, that we have made a corresponding abatement of TEN DOLLARS per ton, from the price of last season.
We are prepared to execute orders from one ton to one thousand tons for PERUVIAN GUANO of *direct importation* into this market, in beautiful order and full weight, and of "Baltimore Inspection."
We have also on hand a full supply of "A A" MEXICAN GUANO, containing 65 per cent of Bone Phosphate Lime, as per Inspector's analysis. Also COLOMBIAN GUANO and No. 2 Peruvian Guano (slightly damaged by salt water) for sale at corresponding low prices.
☞ A liberal abatement made to commission merchants, or clubs of farmers buying to amount of 50 tons.

P. MALCOM &CO.
GRAIN AND GUANO WAREHOUSES,
Wood St., Bowly's Wharf, Baltimore.
mh1-2t

GUANOS FOR SALE.
PERUVIAN GUANO, No. 1,
COLOMBIAN GUANO,
MEXICAN GUANO,
AFRICAN GUANO,
} BEST QUALITY.
BONE DUST, from the best Factories.
GROUND PLASTER, &c.
All at the Lowest Market Prices. Apply to
S. SANDS & WORTHINGTON,
mh1-tf Office "American Farmer."

SEED CORN.
AN experienced Farmer of Pennsylvania offers to supply us with pure 8 rowed Flint Corn, or the *large or small* Gourd Seed CORN, a perfect article for seed, if sufficient orders are received to make it an object. Price $1,50 per bushel, including 2 bushel bags, deliverable in Baltimore. Apply at this office. mh1-2t

CONTENTS OF THE MARCH NO.

Work, Farm, for March,	275	Inspecting Grain, &c.	296
Do. in the Garden.	278	The Farmer in N. C. and Va.	297,300
Do. among the Flowers,	299	Bay Tobacco,	298
Sugar Cane, Syrups, &c.	279, 294,295.	Dr. Antisell on Soil analyses, &c.	298,
Notice of communications,	280	The Weather,	299
Surface Manuring,	281	Guano and Charcoal,	300
Cultivation of Tobacco,	282	Damage to Corn in Va.	"
Colombian Guano,	284	Manures, their application	"
Wyandotte Corn,	"	Mixed Guano, effect of,	"
The Wheat Crop,	"	Sewing by Machinery, (cuts)	301
Lime, and making Kilns, (cuts)	285	English Traits,	303
Experiments in hog feeding,	289,298	Swinish Refinement,	"
Times in the West,	289	Great product of Corn,	304
Guano, reduction of price	290	Bloody Murrain,	305
Profitable Farming,	"	Carrots, yield and value of,	"
Plaster Paris, its action,	291	Cure for Garget,	"
Prolific Corn and Barley,	293	North Carolina Farmer,	"
Chinese Sheep,	294	J. H. McHenry's Alderney Bulls Commodore and Reward, (cuts)	306
Diseases of Hogs,	"	The Md. Legislature,	307
Public Documents,	"	Graining and Grazing Cattle,	"
Peabody Corn,	295	New Advertisements,	"
Md. State Agr. Soc., bill for relief of,	295,297	Markets, &c.	
Selling Corn by weight,	296		